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PLAY METER

Volume 6, Number 11

June 15, 1980



Amusement Operators Expo Coverage

Business Computers Issue

New Galaxian

Cocktail Table



SPECIFICATIONS:

Height: 29" (73.63 cm)
Depth: 32" (81.25 cm)
Width: 22" (55.86 cm)

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Midway intends to take all legal action necessary to protect its proprietary rights against all copiers of the GALAXIANTM video game and the sellers of such infringing games.



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PLAY METER

PLAY METER

Vol. 6, No. 11
June 15, 1980

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From the Editor

If you've been reading the newspapers or watching the television news recently, it probably comes as no surprise to you to learn that our country has entered into yet another economic recession. Although a lot of optimistic things can be said about the recession-proof aspects of the amusement machine industry, one should not be misled into thinking business will continue as usual, and we'll come out of the period relatively unharmed. That may have been the case back in '74, but things are a whole lot different today. Unless operators act now and do something about the current economic crisis, the recession of 1980 will surely take its toll on this industry.

Never before has there been such a need to re-evaluate present commission arrangements and pricing policies. Long gone are the days when an operator could buy a new game for less than \$100. Long gone are the days when friendly wagering fueled the fire and the cash boxes of this business. Gone are the days when a new machine would pay for itself in a couple of weeks. What's not gone, however, and what should have been gone a long time ago is the 50/50 commission arrangement.

The lucrative gaming machines of the past are extinct and so too should be the 50/50 split. Games of chance have been replaced by elaborate, sophisticated games of pure amusement, skill, and sport. The cost of such equipment has soared to incredible proportions while the useful life of these machines has dwindled. Amusement machines by their very nature tend to lose their play appeal after a relatively brief period of time. The transition from gaming equipment to amusement equipment was indeed a two-headed serpent.

An honest appraisal of this transition would have to conclude that operators missed the boat during that period. At that point in time, this industry underwent some drastic changes. Just as the entire nature of the business had changed so too relationships with locations should have changed. The location relationship should no longer have been considered a partnership. Instead, operators should have established themselves with their locations as being professional service companies supplying a unique form of entertainment to the locations' customers.

Locations should have been told that if they can't make it without the revenue from the machines they had no business being in business. Tavern and restaurant owners should not be in the amusement business, and amusement companies should not be in the tavern and restaurant business.

The operators of America may have missed the boat once, but the recession of 1980 has hit, and it has hit hard. Equipment costs, labor costs, transportation costs, and interest rates have soared to all-time highs. How much more can the operator take? Something has to be done. Until manufacturers can provide us with games featuring multiple coin, adjustable credit systems, one can go only so far in raising prices. The only real solution is better commission arrangements.

In the past there were two main deterrents to reducing locations commissions. (1) Locations could threaten to buy their own equipment, or (2) locations could threaten to bring in another operator. Today the two deterrents are of little concern. Today's equipment is so electronically sophisticated that locations would find them prohibitively expensive and impossible to maintain.

Furthermore, any operator still operating on a 50/50 basis simply cannot be operating as efficiently as someone who is operating with a better split. The equipment has to remain on location longer, the service has to be slower, and earnings reflect that. Cutting service calls to a minimum, making collections and service rounds once every two weeks instead of once a week, and other such practices are not the solution.

What is actually happening is because the operator is hemmed in by the poorer commission arrangement he has had to cut his services—and that naturally cuts collections since the machines go longer without being serviced. Instead, they should be serviced regularly, just as before—only the operator needs to be able to afford that extra service. This is where the extra ten percent commission split can help. It can mean that an operator on a 60/40 split can service his machines more readily, more frequently, and better than an operator who is working on a 50/50 split. It's simply a matter of economics, and it should be shown just like that to the location owner who balks. Lesser service means less in the cash box. A 50/50 split means less money—to the location owner!

The time to act is now. If you fail to act, you may not be around long enough to regret it. You're a professional, a businessman, a specialist in your field, and you deserve a fair return on your efforts. You are providing a service to your customers and their customers. You should not have to pay so dearly that economically you have to reduce the services you can provide as a professional. After all, what other service business pays their customers for doing business with them?



Ralph C. Lally II
Editor and Publisher

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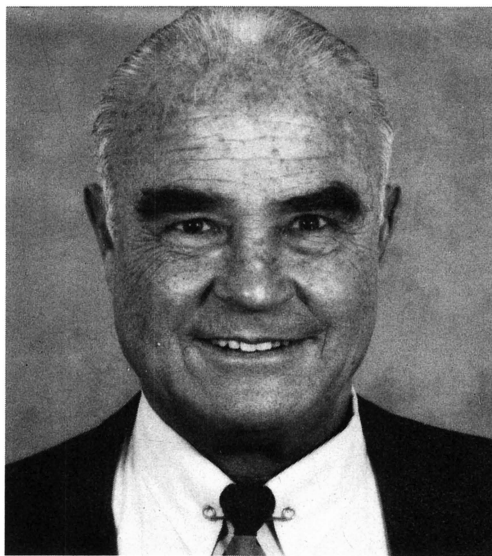
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By Louis Boasberg

GUEST EDITORIAL

Bowling balls and pinballs

The February, 1980 issue of *Bowling Proprietor*, the official publication of the Bowling Proprietor's Association of America has a most interesting article entitled "Pinball". The writer of the article is anonymous but he evidently knows the bowling business and also knows plenty about coin operated amusement games operating in these same bowling alleys.

This article devotes much space to pinball and amusement games and discusses the question of whether or not a bowling alley should own its own equipment, operating same and not using the services of an operator.

I believe I am more qualified to answer this question insomuch as our company has operated in quite a few local bowling alleys for many years, and I may be egotistical by saying that I do not think that any of these bowling alleys would want to operate any other way except with New Orleans Novelty Company. In fact, some of these very same alleys have tried in the past operating their own equipment but without success.

So, I say to all bowling alley proprietors in answer to this ownership question that if you have an operator who is most progressive and aggressive at all times, who is constantly on the lookout for new, intriguing, and better equipment to make you money, who constantly changes this equipment and keeps it clean and in perfect working order so that your revenue will be maintained at its highest peak throughout the year—then I can say without hesitation that there is no substitute for a good, professional operating company operating the amusement games in any bowling alley.

The management and owners of any large alley or chain of alleys have enough to do running the bowling alley and the various side lines such as bowling equipment, snack bars, vendors, kiddie rooms, cocktail

lounges, discotheques, and other endeavors, much less having the added duty of taking on their coin-operated amusement equipment—which in itself I can assure you is a most specialized, demanding, and tough job.

In summing up the question whether or not a bowling alley should purchase their own equipment, I can say emphatically if the bowling alley has a bad operator who does not give the alley superior service, superior equipment, make frequent changes, expert percentageing, inspections, cleaning, and other things that make for a good operation, then perhaps the bowling alley, if they have the manpower and the time, might purchase their own equipment.

But, if they have a good operator, there is no way in the world they can *net* more money owning their own equipment. Of course, large bowling alleys and other locations might have an ulterior motive in owning their own equipment. If this is true, they are only fooling themselves. They are cheating themselves and doing something that is not only wrong and illegal but is a bad business practice.

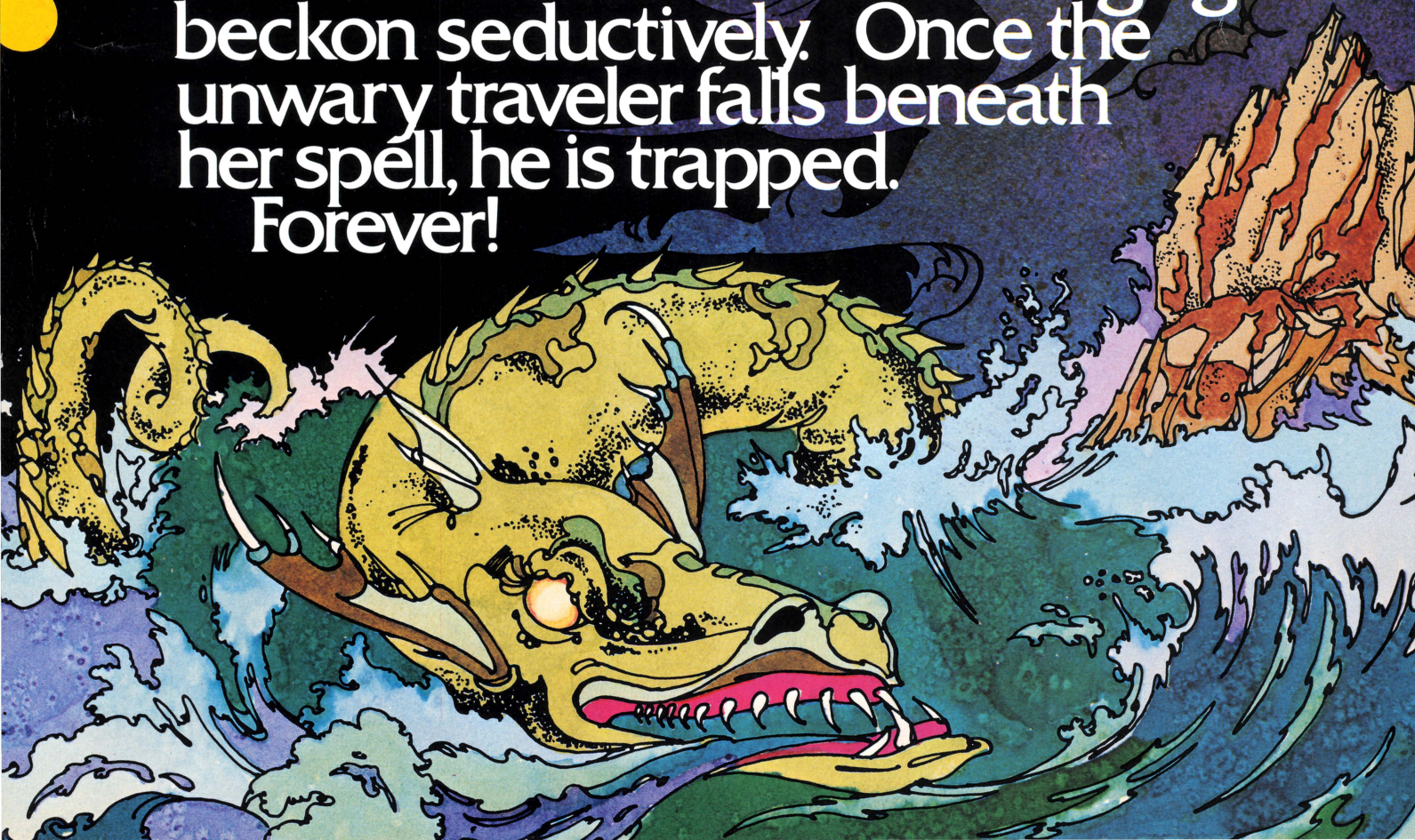
So, my final advice to all bowling alley proprietors is get a good, progressive, hard working operating company. Let them operate honest and above board on a percentage basis and make sure the percentage that is accruing to the operator is at least fifty percent, which would allow him to provide you with the very best of equipment and service.

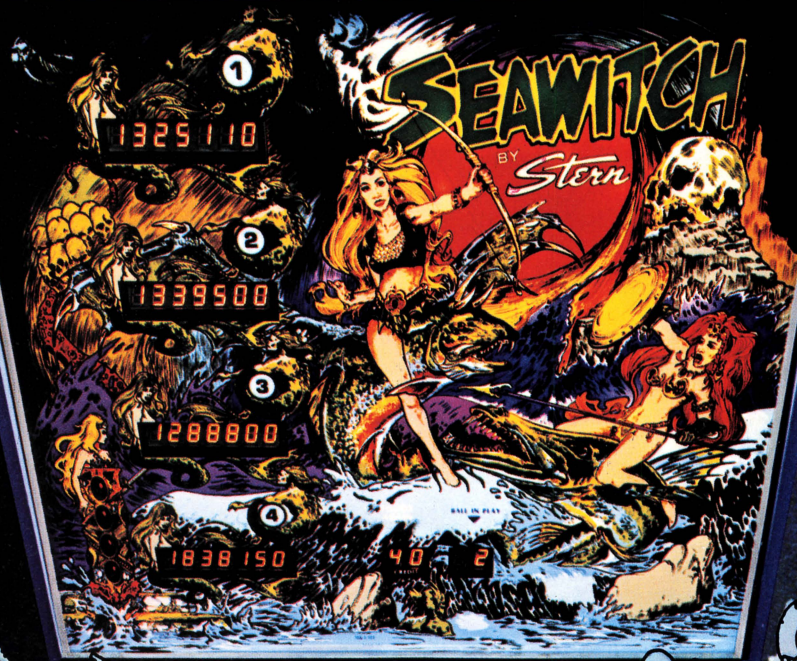
Do not be fooled by some operator who offers you a greater percentage, as he is speaking for his benefit, not for your own. Do not deny your operator a legitimate profit for his work and investment, and always remember there is no substitute for know-how, hard work, experience, and specialized knowledge in any business, especially the coin machine business.

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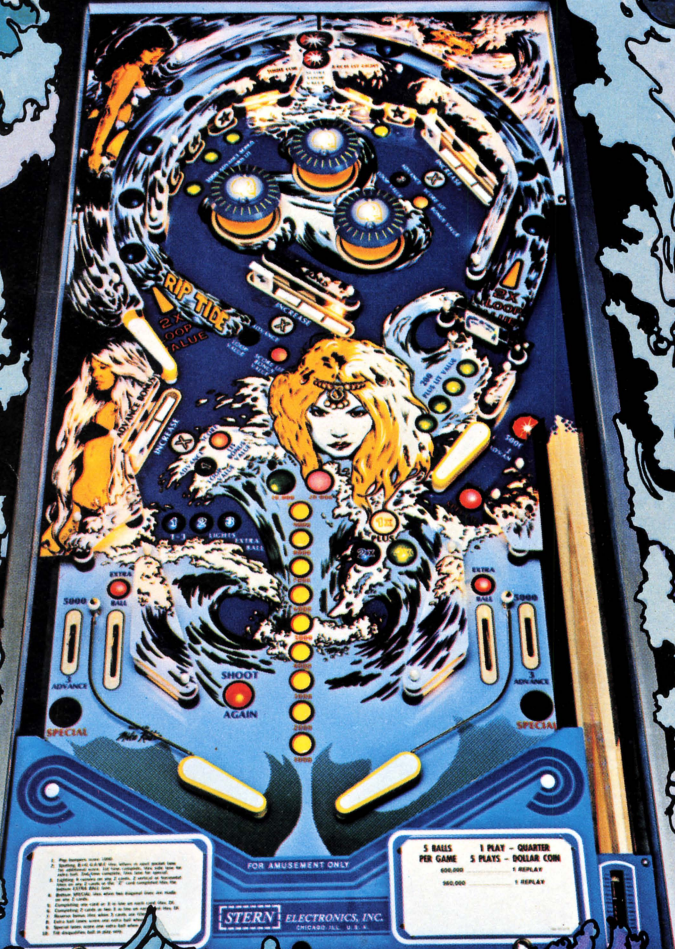
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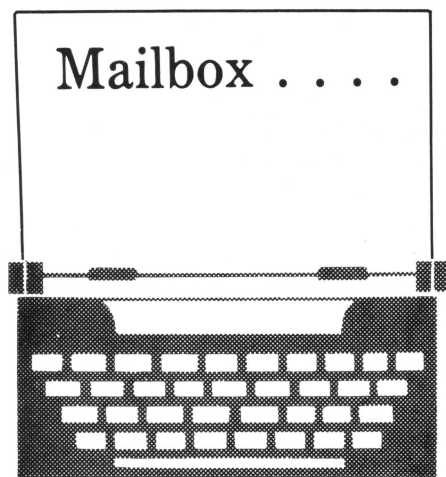
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'Spidey' bigger

On page 10 of your April 15th issue, second column, fifth paragraph, PLAY METER indicates that *Spider-Man* is "a conventionally sized pin."

Much of the fuss we have been making in our publicity and advertising lately has been centered around our new "Dimension 80" which is a brand-new size.

I would appreciate it if you would advise your staff of this momentous fact and threaten them with three weeks of playing nothing but electro-mechanical games if they ever make this mistake again!

**Thomas L. Herrick
D. Gottlieb & Co.
Northlake, Illinois**

Ed. note—Really, we're sorry for the goof, 'Spider-Man'! But the specs of the new Gottlieb Star Series 80 were detailed—correctly, we trust—in March's PLAY METER, pages 46 and 47.

Adjust the prices

During the last number of years, our industry has made tremendous strides in the manufacturing of pinball and video games. The machines are beautiful, innovative, and very exciting to play. I commend the industry for turning out the latest electronic devices....And along with all this, the prices for this equipment are continuously rising.

But the most important detail has been completely forgotten—namely the pricing structure.

Why can't the manufacturers

make an adjustable coin drop, so that we, the operators, can *gradually* increase the pricing by nickels and dimes, thereby getting thirty cents, 35 cents, or forty cents per game?

At present the adjustments are approximately as follows: 25 cents per one game; 25 cents per two games; fifty cents per three games; three balls per game, or five balls per game.

But in *all* cases, we are only realizing 25 cents per game, each game consisting of an average of seven minutes of play. The above

structure applies to pingames, but the increase we are seeking, as operators, applies to videos as well.

Please remember inflation has hit the operator as well.

It is a simple matter for the manufacturer to raise the prices of equipment, but our hands are tied!

I would appreciate some comments from operators and/or manufacturers.

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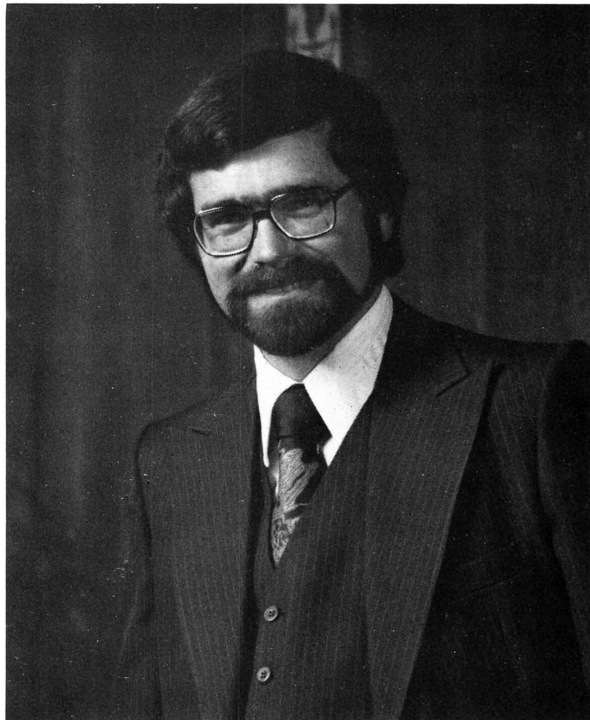
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Coinman of the month



Charles C. Ross

One of the big hits at the seminar series of the Amusement Operators Expo was Charles C. Ross, who delivered seminars on depreciation and business profitability.

The enthusiasm with which seminar attendees responded to his two classes was probably matched only by the enthusiasm of this energetic coin-op man who, at the age of 28, has quite a lot going for him.

He's a college instructor, a street and arcade operator, and a business consultant. Because of the many hats he wears, we see himself as a sort of bridge for operators between academia and the real world. "I know the theoretical base," he told *PLAY METER*. "I know the way things should be done, according to the book. And, at the same time, I know the common problems an operator faces."

After being graduated with a Master's Degree in Business Administration in 1974, he joined the faculty of Southwest Texas State University in January as an instructor. In November of that same year, he entered the coin-op business when he bought Magic Coin, a small arcade that had about 25 games at the time. Using Magic Coin, he has extended his base of operations, incorporating street locations to his operation.

A frequent contributor to *PLAY METER* magazine [in fact, he was the first prize winner in *PLAY METER*'s feature article competition two years ago with his

three-part series on depreciation], Ross has written for *Skin Diver* and the *Small Business Institute Review* also. And, together with his consulting partner, Richard Priesmeyer, he has written two books, "The Profit and Cost Control Handbook" and "Effective Inventory Management." Presently he and Priesmeyer are working on a third book designed specifically for operators, called "How to Efficiently Run Your Operation."

Ross and Priesmeyer formed their consulting team, Innovative Management Consultants [300 N. LBJ Drive, San Marcos, Texas] in August of this past year and are presently servicing several operators in the United States.

Said Ross, "We like to go in and cause as little trauma as possible to the guy's organization. We don't go in," he assured us, "and say the guy is doing everything wrong. We merely want to find out what the guy is doing and what additional information he needs that he's not presently getting so that he can operate more efficiently."

This type of approach has led him naturally into the field of computer science where he has found the operator can assimilate more relevant data quicker than he could with a manual system. For this reason, we thought it would be interesting to hear his thoughts on today's operator and the world of computers.

He is married [wife's name is Jeanne], and he has a four-year-old son, Christopher, from a previous marriage.

PLAY METER: What is the advantage of going on computer?

ROSS: The time you save. I should point out a computer is not going to do anything for you that you cannot do for yourself by hand. The advantage is that a computer can do it for you a lot faster. It just isn't feasible for the operator to pay someone to sit down and try to grind out information by hand because when you start talking about pulling such things as ROI by machine by location, you're asking almost the entire salary of one bookkeeper to sit around and plug a calculator all day long, and that's not the most efficient way to do things.

In fact, the slowest part of the whole process once you're on computer is putting the information into the computer and letting the computer print the information out for you. It's slow, but it's still faster than the fastest typist out there.

PLAY METER: In terms of the number of machines, number of locations, or the number of employees—at what point does a computer system for record keeping purposes become feasible?

ROSS: That depends on what kind of information the operator wants. If he just wants to know revenue, if he sees no use in knowing revenue by machine or revenue by location, if he has no need for decision support data, then there may never be a point at which he needs to go on the computer.

Then there's also the question of what the operator plans to put on the computer. But if he wants to put his entire bookkeeping system on the computer or use the data for studying the efficient use of his machines, I'd guess a computer would become feasible for him around 150 games or so. But, again, it depends on what kind of information you want.

PLAY METER: What else should the operator consider before deciding if going on a computer is useful to him?

ROSS: He should determine if he's already getting the kind of information he wants the computer to give him. If he is, he should ask himself how much it costs him to get this information. For instance, if it takes his bookkeeper 20 hours a month to get this information for him, he should figure in what he's paying a bookkeeper to compile this information for him 20 hours a month. Let's say he's paying his bookkeeper four dollars an hour. By switching over to the computer, he may find he can cut that time in half and save himself \$40 a month by going on computer.

An operator should also ask himself what it's going to cost him to go on computer, to get the unit set up and operating. So you have to figure out your return on investment. But first you have to figure out what you want and what you need. What are the benefits going to be versus what it's going to cost you to do it.

If you're a super efficient operator right now, you may find that you might not even need a computer if you're running 150 games. But if you're not getting all the data you need to make intelligent decisions, you may decide to go on computer at 100 machines.

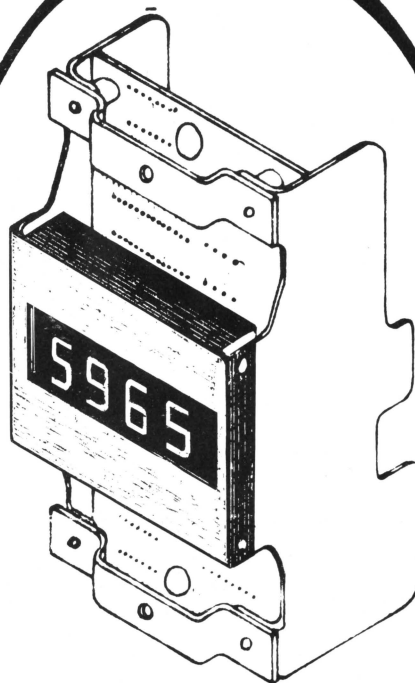
PLAY METER: What are the options open to the operator who decides to go on the computer?

ROSS: There are actually two—one is time-sharing off someone else's computer and the other is, of course, buying your own computer.

PLAY METER: Could you explain time-sharing first?

ROSS: Time-sharing is where you lease a terminal in your office and get a telephone tie-in to a mini-computer, and you input your data from afar. Usually you're charged something like a monthly fee, a connect fee, and other odds and ends, like the paper you use.

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The advantages of this method are that it's usually cheaper if you're just an occasional user and you don't have the maintenance problems because that's handled by whoever owns the equipment you're leasing. Another advantage is that you pay only for the time you actually use, but the main advantages are that you don't have the maintenance problems and the initial investment.

Now, the disadvantages, as I see it, are these: It's going to be more expensive over the long haul than it would be if you had your own computer in house. What I mean by that is most operators don't plan to be in business just two or three years. They plan to be in business for 10, 20, or 30 years. And over that long haul, you get your cost break for laying out that initial investment for your own equipment.

Another disadvantage is that you're locked into the computer service company's canned program, and so you lose a certain degree of flexibility because you can only do what they've programmed the computer to do.

PLAY METER: You prefer buying your own computer equipment. Why is that?

ROSS: That way I can design the programs the way I want them. I've got everything there with me. It gives me the ability to make the computer do what I want it to do. I think this is better than having to time share and go along with someone else's canned program. That's the big advantage of owning your own computer, you can do different things, rather than having to use the same old canned stuff.

Also, if you buy your own computer equipment, you can claim an investment tax credit plus you get to depreciate it (and that would be ten percent of the purchase price since your computer would have a seven-year life or more).

PLAY METER: How much can one expect to pay for a computer, if he decides to buy his own equipment?

ROSS: For the small to medium-sized operations, something like the Radio Shack TRS-80, Level Two or the Apple II system would be useful. They would cost somewhere around \$3,500 to \$4,500, for the hardware alone.

For that, the operator can expect to get the central processing unit (CPU); the CRT (cathode ray tube); the line printer which will give him what is called the hard copy so he can have a printed report; and the disk drive, which includes the floppy disks on which you store your programs and data. You see, you store your programs on these little disks and put them into the brain of the machine so you can manipulate data.

PLAY METER: That \$3,500 to \$4,500 figure is just for the hardware. Isn't that right?

ROSS: Yes, then you must program the computer. For that, you can sit down and try to program it yourself, but there you're talking about a learning time of probably two to three months.

The alternative is to bring in someone to do the programming for you. And, in that case, you are going to have to be ready to tell the programmer exactly what information you want. And that should take quite a bit of thought because many times the operator doesn't know what he really needs.

PLAY METER: What can you expect to pay for a programmer's services?

ROSS: That is going to be expensive. It'll depend, of course, on what you want him to do. And I would encourage the operator, once he's made the initial investment of buying the equipment, to try and get the computer to do everything it can for him. After all, it's to his advantage to get all the information he can out of that

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"I'd guess a computer would become feasible for an operator around 150 games or so"

computer so he can make the right decisions.

Now, if you're going to buy your own equipment and have someone do some special programming for you, it'll cost you about \$40 an hour. You can figure the whole cost of the software will be around \$5,000 or less, depending upon how full-blown you're going to get. So ballpark your software cost at somewhere between \$3,000 to \$5,000 or more. The cost of everything, hardware and software, therefore, would run you less than \$10,000.

PLAY METER: Are there any limited applications for the less-expensive personal computers that you would recommend for the smaller operations?

ROSS: If the guy doesn't need a whole lot of information, he may want to look at things like the Radio Shack TRS-80, Level One—the one that's advertised on television all the time for \$599.

PLAY METER: What are some of the things you can incorporate into your computer?

ROSS: You can keep track of revenue by machine, by location. If you want to know average earnings per day, per machine, per location, it can do that. I want to keep track of repair costs; so when it costs me \$35 to farm out something to get it repaired, I want to be able to plug that into the game's record so I can keep track of how that game is doing as far as contributing to my total net profit picture.

PLAY METER: So you want to be able to find out more

information about your equipment so that you can tell which equipment is really making money for you?

ROSS: Right. Sometimes a machine can appear to be an excellent earning piece, but it breaks down regularly and loses so much that you find out it's really not that good a piece after all. If you're on a computer, you can see that in a second.

It also helps me keep track of each machine's depreciation. I think this is very important because if you ignore depreciation in this business, you will die because it is so very real. There is one known fact in the amusement business, and that is someday that red hot pinball will be a dog. So I want my computer to subtract from the collection total that depreciation figure by machine and by location.

PLAY METER: Why do you want to know depreciation by location?

ROSS: If you do that, you may change some of your views as far as which locations are good. You might find out, for instance, that some of the locations that you thought were good aren't really that good after all. It won't mean necessarily that you should pull out of these locations, but at least you'll have some better information for when you put new equipment in there.

PLAY METER: Is there anything else a computer can accomplish for you?

ROSS: Yes. If I want to include our operating expense load, I can divide it over all my equipment for the year and, in that way, keep track of how much it costs me to

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"I strongly feel anyone who has 150 to 200 machines can probably make the system pay for itself"

operate each piece of equipment. This, I think, is a tremendous advantage for me. You see, a lot of operators look strictly at what a machine makes. They ignore depreciation. They ignore repair. They ignore operating expenses. And they get all excited when they find out the machine paid for itself in 30 days or 60 days or even 15 days. But what these operators don't realize is all the costs associated with that machine. A *Space Invaders*, for example, will depreciate about \$60 a month, as far as the book depreciation is concerned.

There are so many applications for the computer for the operator today that I strongly feel anyone who has 150 to 200 machines can probably make the system pay for itself because the computer will be able to give him information that he didn't even know he ought to be getting. Of course, it is all dependent upon his programming the computer correctly because the computer will only give you what you program it to give you.

You see, the amusement operator is a better candidate for a computer than a lot of other businesses because the amusement business lends itself tremendously to analytical study. The applications for a computer are almost endless. You can use it to keep track of your machines for permits. You can keep track of where all your machines are. And, from what I understand, this is really a problem with some of the larger operators. Their operations have gotten so big they really don't know how many machines they've got—350 or 500. It's a tribute to them that they have been able to forge a company that has grown so big, but they have to be willing to admit that they need help now to keep track of it all.

And a computer can do this for them. All it amounts to is that it's a sophisticated file cabinet where you can gather your information efficiently.

Another thing a computer can do for you is that it can give you a report by exception—for instance, if you want to see those machines that earn less than, oh, let's say \$25 a week or whatever breakdown you use, and you have that capability programmed into the machine, the computer can give it to you. It'll give you a printed copy of every machine, where it is, and what it's making. It'll show you the bottom of the barrel. And, of course, you can go the other way and see what your really hot dog pieces are making. You could have your computer print out a list of all those machines making over \$200 a week.

Another advantage is that you could have your computer keep track of your free play percentages. And this is important because I think if you analyze it you'll find that there's an optimum free play percentage for each model. You'll find there's a point when the machine gives away that many free plays, you wind up with more money in the box. And then when you start giving away more or less free plays you make less. I really don't think you should have a standard free play percentage for all your games.

PLAY METER: But if you subscribe to a time-sharing program, can't you have the computer service set up programs like this for you?

ROSS: Yes. I'm not saying they wouldn't work with you

to design such a system for you, but it's going to cost you.

PLAY METER: How timely must the information be to be valuable to the operator?

ROSS: I think the operator should be working on a monthly cycle. He needs this information at least once a month so he can make his decisions as far as when to move games. Another thing that can be optimized is when does the guy move a machine? He moves it basically when he thinks it ought to be moved, but does he have any support as to when it ought to be moved? And where he should move the piece to? Well, there are some things the operator can do as far as analysis that can tell when a machine should be moved and where it should be moved to. Of course, you want to make sure you move the machine to a location where you haven't had it before, but exactly where? The computer can assist in that.

PLAY METER: How long after installing your own computer, should you continue with your manual system?

ROSS: If you plan on doing the programming yourself, I suggest you keep two sets of books for about six months. But if you bring someone in to set up the system who knows what he's doing, and they've already tested and proved the system works, the transition would probably be just about a month.

PLAY METER: Now I understand you are working on a software package designed specifically for the operator.

ROSS: Yes. We're working on two general classes of programs. One is a record keeping system that will give the operator a trend by machine with a graphic display. It will show him his sales by machine, his net profit by machine, where all his machines are, when each of his machines was purchased, and when each machine was placed at its current location.

And our second program is what we call an operator-decision support system. This one is oriented toward goal seeking. It'll work toward projecting a desired ROI, a projected net profit. The program would break down the data by machine and by location. We're going to do things like evaluating new machines from an ROI standpoint, establishing sales goals for new machines, determining the proper pricing for the machines to achieve those sales goals, and evaluating the optimum free game threshold.

And we plan to find things like each location's break even point. We plan to work with cash flow and do some "what if" planning; so the operator can make the right decisions. And much of the same things will apply here. We'll project a net profit per location, find out when you have to add more service personnel, sales goals for new locations, return on investment for new locations, feasibility studies for new locations. All these things will be done in our decision support system. We think we can do all that software for a lot less than what the operator could expect to pay. And the program like this is designed to do more than merely help an operator keep up his records. It's designed to give him some decision support.

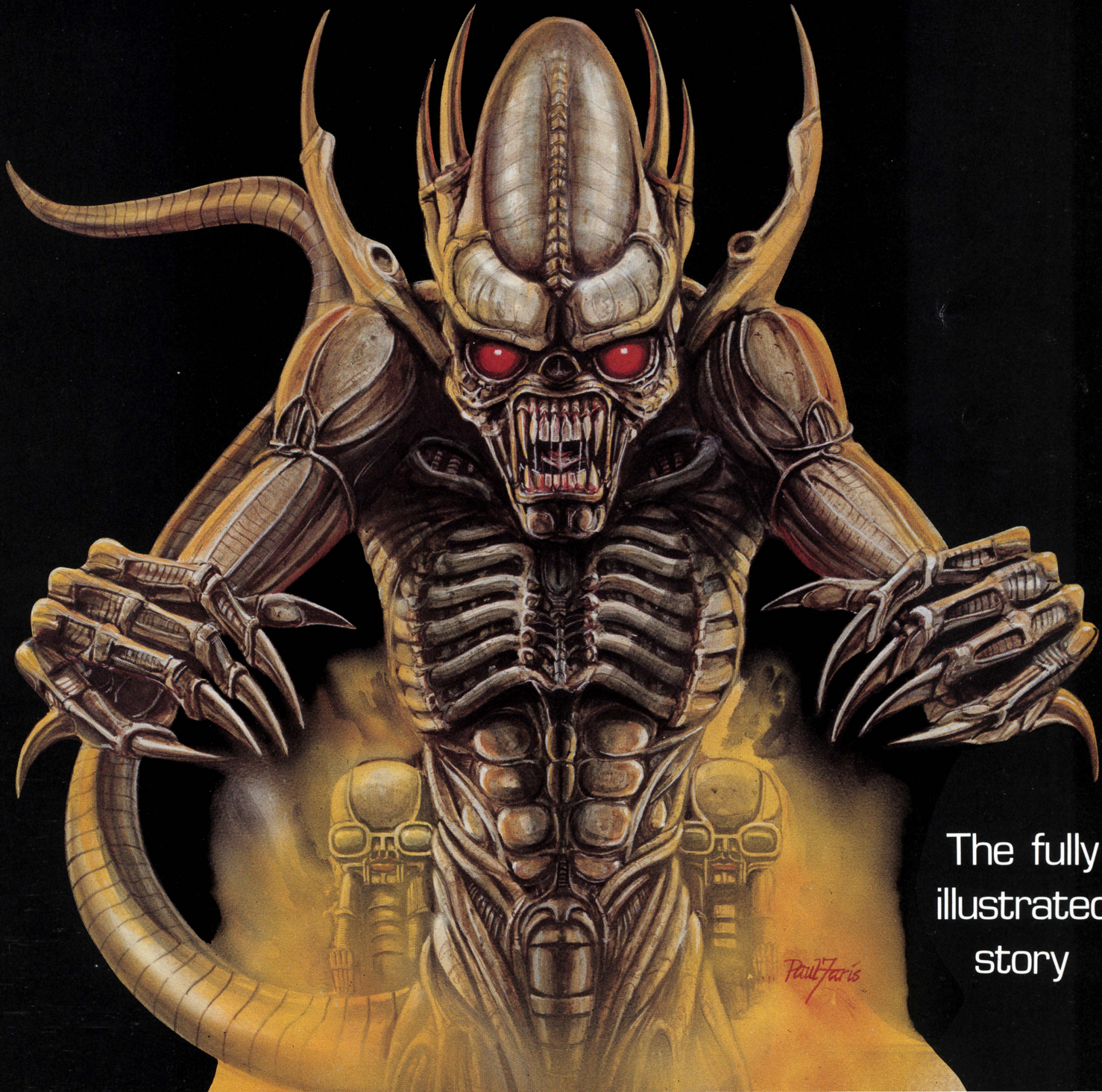
"The advantage of owning your own equipment is you can do different things, rather than having the same old canned stuff"

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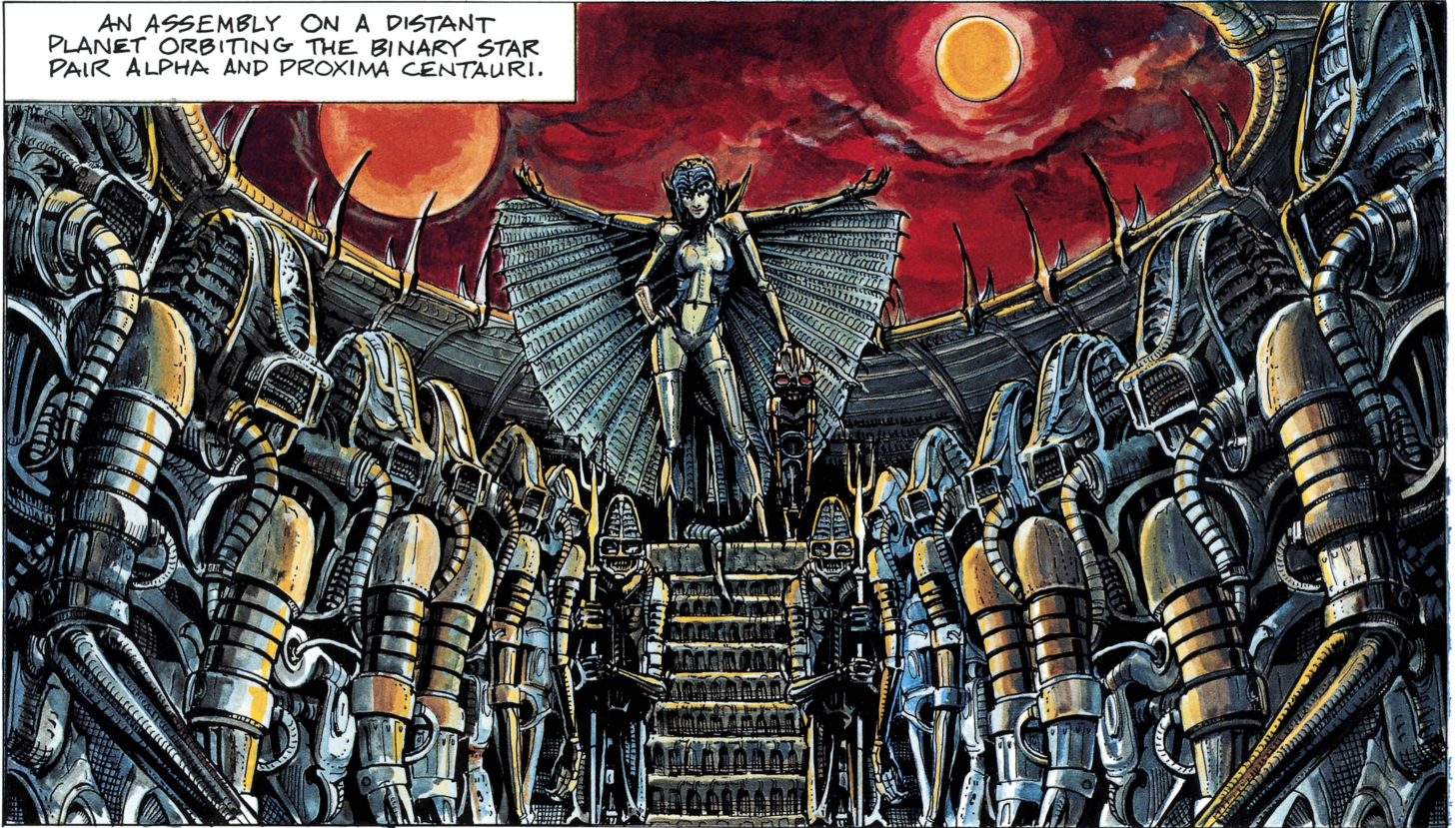


Bally SPACE INVADERS

STORY: MARY BETH BUSH & CAROL PORTH
ART: PAUL FARIS

...the pinball.

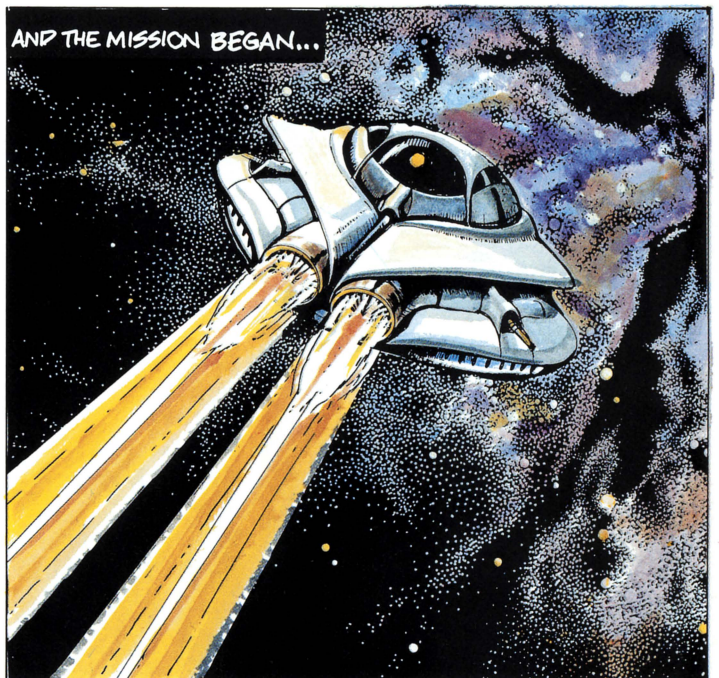
AN ASSEMBLY ON A DISTANT
PLANET ORBITING THE BINARY STAR
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AND THE MISSION BEGAN...



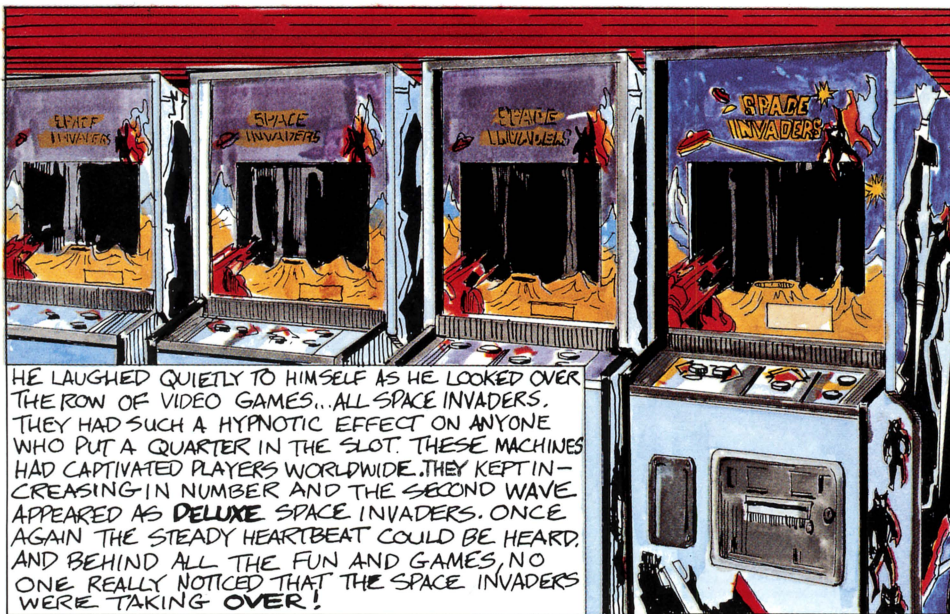
EARTH: 1980



T.J. OWNER LOOKS AROUND THE ARCADE ONE LAST TIME BEFORE LOCKING THE DOOR. IT HAD BEEN A GOOD DAY..THOSE BALLY-MIDWAY GAMES REALLY MAKE MONEY!

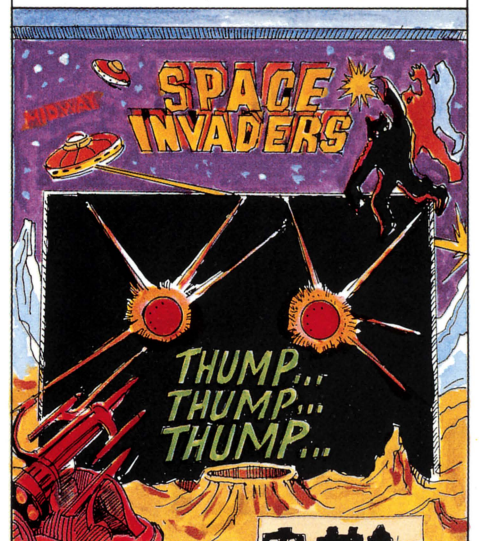


HIS EYES PASSED OVER THE ROW OF PINBALL MACHINES, ALL DARK AND QUIET NOW.



HE LAUGHED QUIETLY TO HIMSELF AS HE LOOKED OVER THE ROW OF VIDEO GAMES...ALL SPACE INVADERS. THEY HAD SUCH A HYPNOTIC EFFECT ON ANYONE WHO PUT A QUARTER IN THE SLOT. THESE MACHINES HAD CAPTIVATED PLAYERS WORLDWIDE..THEY KEPT INCREASING IN NUMBER AND THE SECOND WAVE APPEARED AS **DELUXE SPACE INVADERS**. ONCE AGAIN THE STEADY HEARTBEAT COULD BE HEARD. AND BEHIND ALL THE FUN AND GAMES, NO ONE REALLY NOTICED THAT THE SPACE INVADERS WERE TAKING **OVER!**

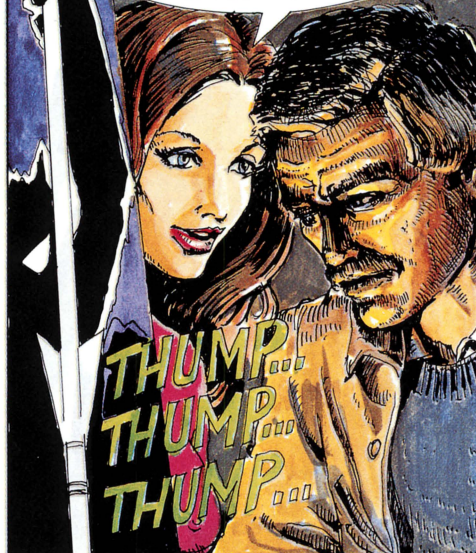
UNNOTICED... IN THE FAR CORNER OF THE DARKENED ROOM..



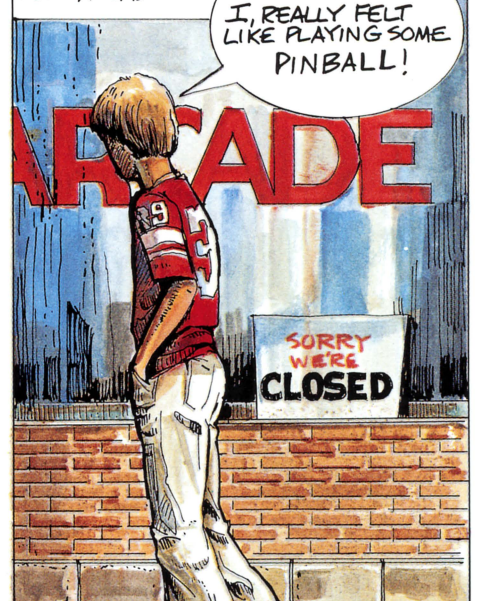
LATER, AT THE CORNER TAVERN.



DON'T YOU GET ENOUGH OF THAT THING EVERY DAY, HONEY? YOU'D THINK YOU WERE HYPNOTIZED OR SOMETHIN'.

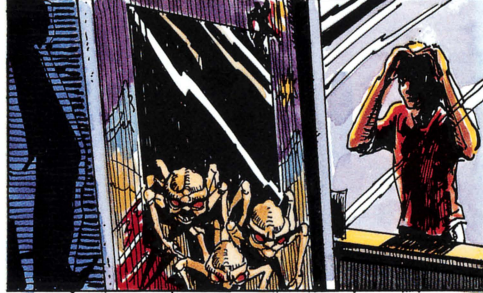


MEANWHILE, OUTSIDE T.J.'S ARCADE

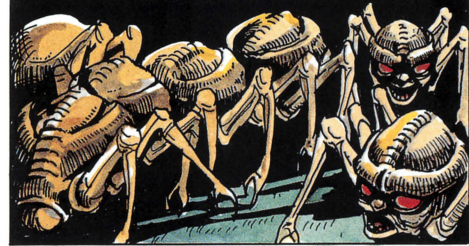




SUDDENLY, FROM INSIDE THE DORMANT VIDEO GAMES...



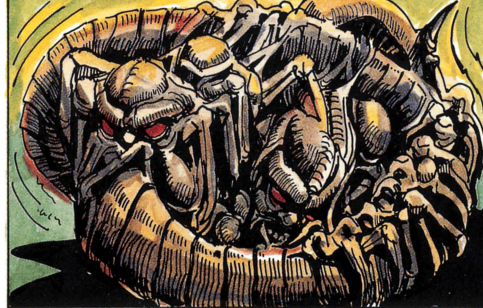
THE ARMIES OF LITTLE INVADERS ON THE VIDEO SCREENS HAD EMERGED FROM THE GAMES AND BEGAN TO ASSEMBLE IN THE CENTER OF THE ROOM.



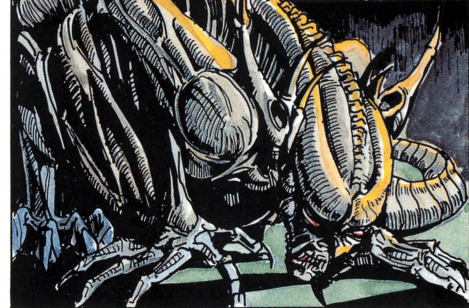
BEFORE HIS EYES, IN THE DARKNESS, THE ASSEMBLED CREATURES BEGAN TO CHANGE FORM.



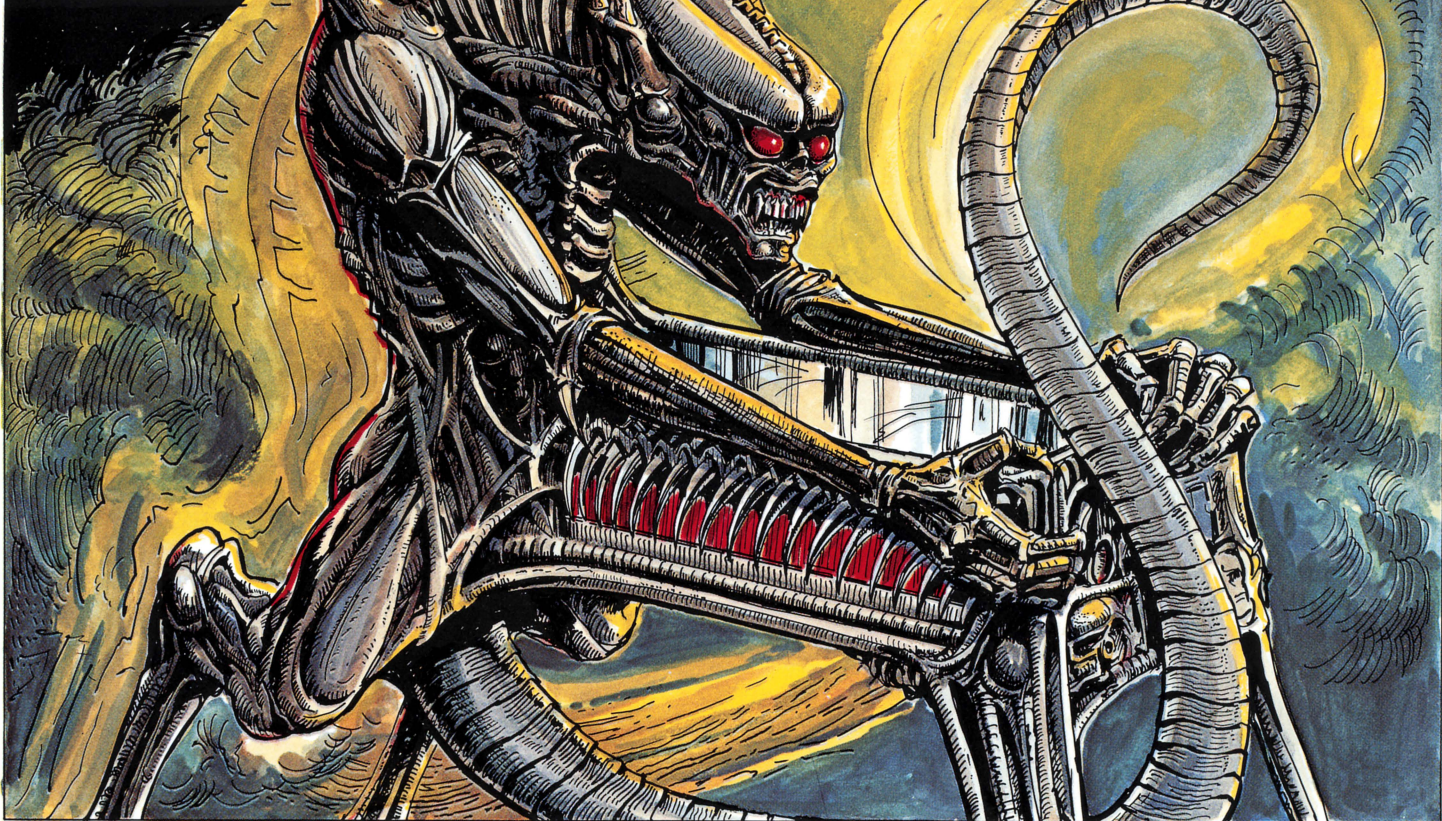
THUMP...THUMP... THUMP. THUMP..

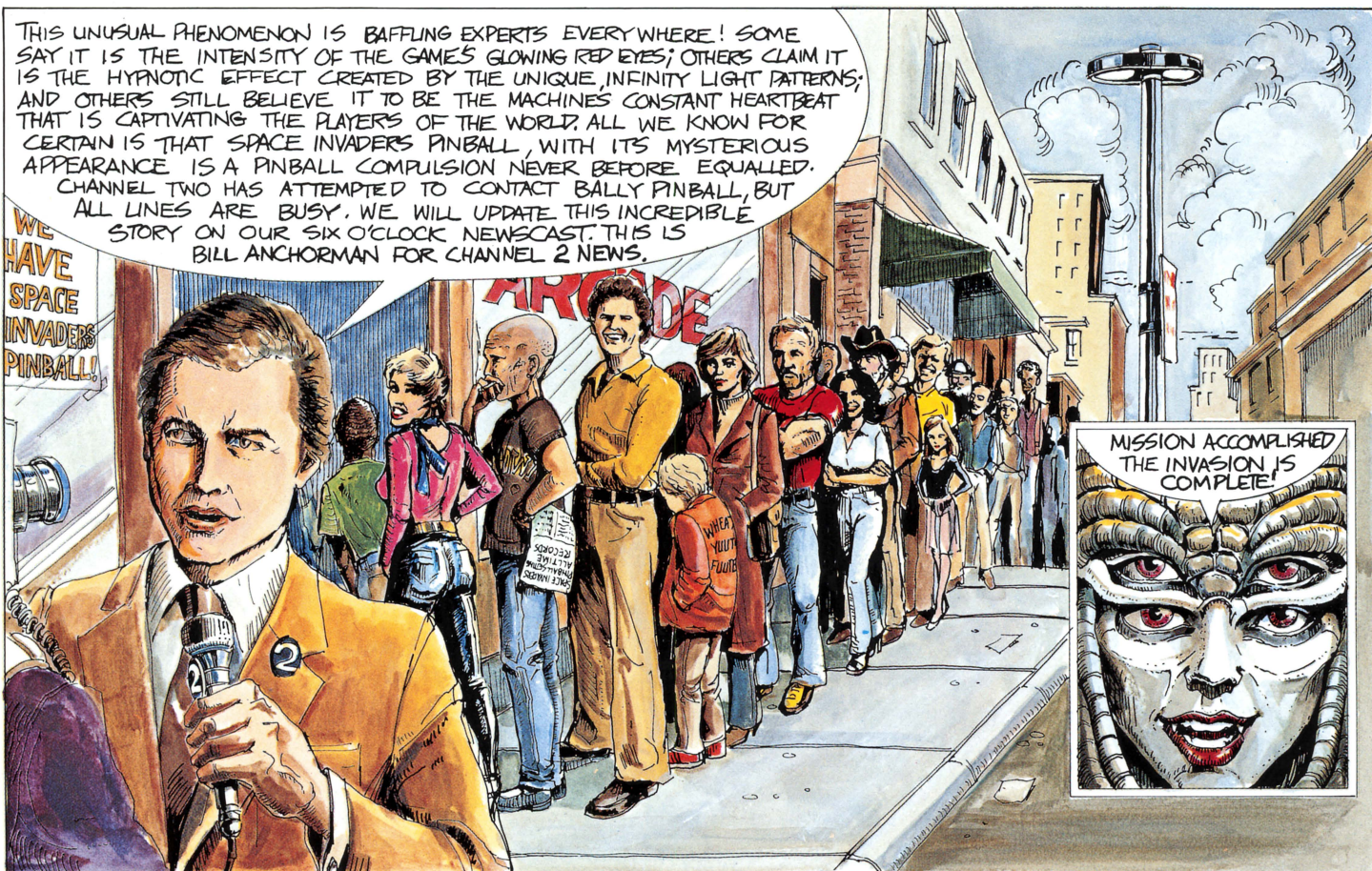
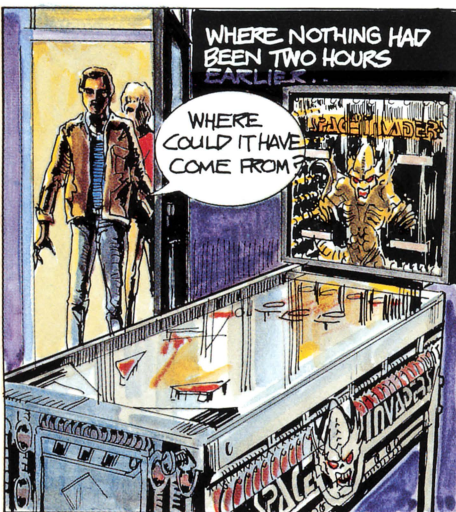
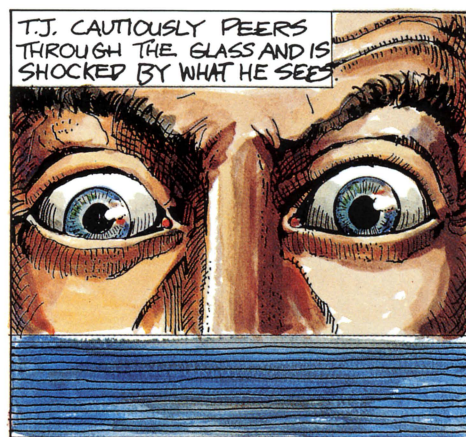


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THE PINBALL!





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Brilliant Bonus Feature With A Brain

Bonus scores advance one step when player's ball hits any one of the drop targets, the center Invader Target, the hoop, or a ball through either return lane. 1,000 to 39,000 bonus is collected by the outhole or the Mystery Ship Rollover. A 5x bonus light adds scoring potential, and the 20,000 outhole bonus is held in the game's brain.

Additionally, 5 red Invader Targets advance a 20-40-60 thousand bonus upon consecutive completions; the third also giving a Special. This 20-40-60 bonus remains in the memory, relighting with each ball.

Captivating Clone Chamber Feature With Memory

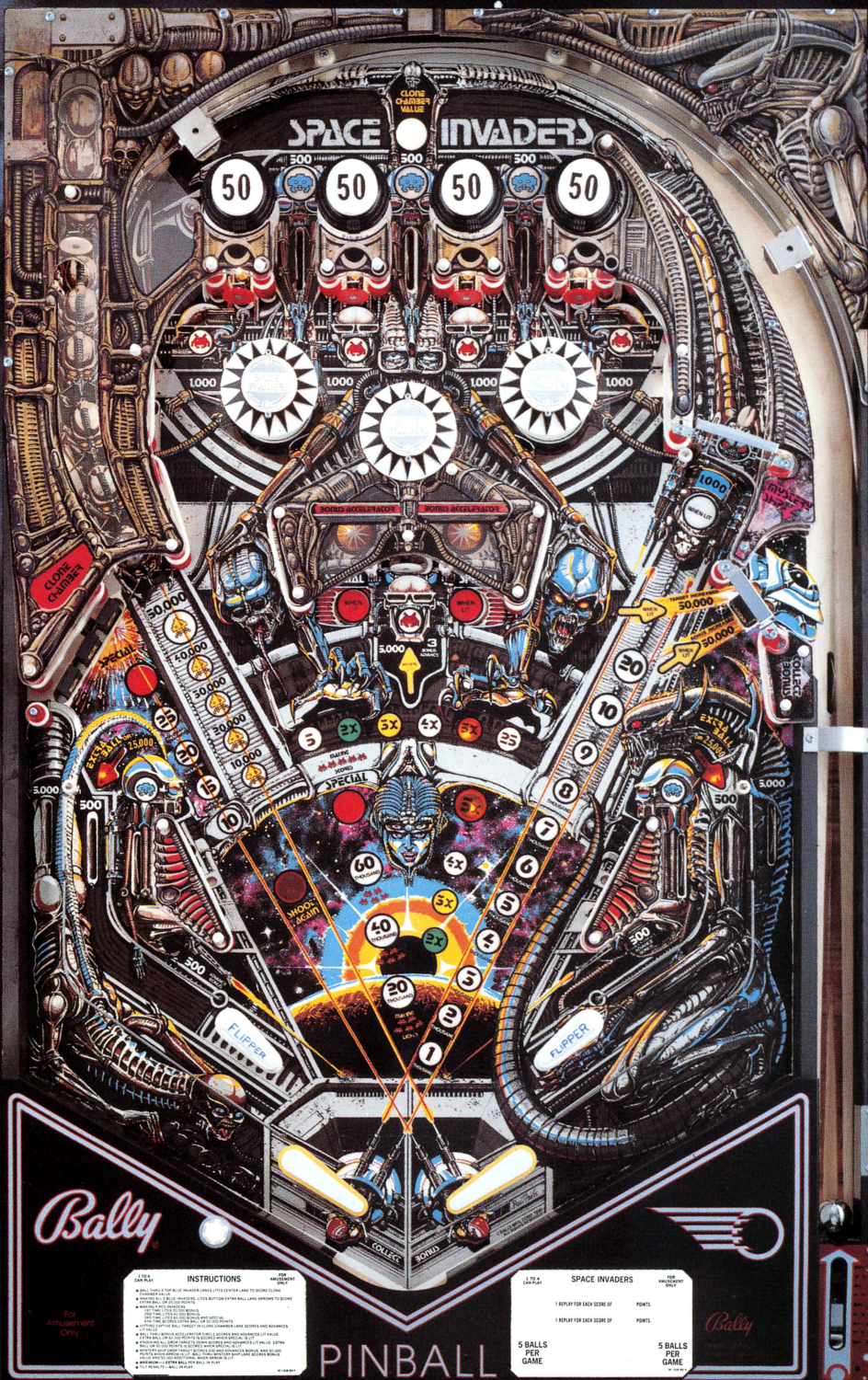
A trapped ball capable of scoring from 10 to 50,000 points lies in the chamber, beginning a new game at 10,000, and increasing with each hit. The Clone Chamber target scores 3 bonus advances.

Pursue Blue Invaders For Heroic Rewards

The Blue Invaders consist of 5 rollover lanes. Knocking out the three Blue Invaders at the top of the playfield lights the center rollover to score the Clone Chamber Value. Completing all 5 lights the rollover lanes for extra balls and the center target arrow for 5,000 points and 3 bonus advances.

Reach Warp Speed Points

Bonus Accelerator Hoop scores 5,000 points and advances bonus, then scores 5,000 points and multiplies the bonus from 2 thru 5x, then scores 25,000 points and/or Special.



Random Mystery Ship Feature Keeps Players On Stand-By Alert.

A drop target worth 500 points and one bonus advance, a rollover for collecting the bonus, and a 50,000 point light are the three sections of this feature that randomly activate for a limited time, allowing players a chance for full scoring potential. A true challenge for even the most skilled players!

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The sessions stimulated discussion...



...and gave a chance to pause and reflect on coin-op.

AOE Seminars:

They came, they saw, they learned

The average registrant at the Amusement Operators Expo took nearly six hours of seminars, learning and sharing methods of operation while at the New Orleans show.

A total of 400 persons registered for seminars at the AOE—some 290 pre-registered and an additional 110 “at the door,” the Conference Management team who organized the program reported. The average number of seminars attended by each registrant was 2.7—nearly six hours “in class.”

Play Meter Publisher Ralph C. Lally II termed the seminar program “an overwhelming success” in attendance. To accommodate the desire to attend more seminars—as expressed by many operators at the March show—the sessions next year will not conflict with exhibit hours, said Lally. At the 1981 show, plans are for exhibits to be open from noon to 6 p.m.; seminars will run from 8:30 to noon, and they will be more numerous than this year.

Other improvements in scheduling and accommodation are likewise on the drawing board for AOE '81 in New Orleans (See Expo Wrapup story, this issue).

Dave Karcher of Conference Management commented, “Seminar programs of this nature are something the industry wants, needs—and will get in the future.” (See separate article, “Why Conventions Are Attended”).

Karcher added, “The overwhelming response was positive and we are planning on maintaining the same concept with even more seminars next year.”

He also noted favorable reviews by 98 percent of the seminar attendees, who responded to a poll by saying they would recommend AOE seminars to their associates in the coin-op industry.

Topics of seminars at the March show ranged from four sessions of “Troubleshooting Concepts” to “Shopping Centers and Arcade

Leasing” to “Creative Marketing and the Coin-Op Business” and more than 15 others.

The following is a report on some of the AOE seminars.

Stephen Goot, an Atlanta, Georgia operator, speaking to some seventy operators on the subject of “Negotiating Commissions with Locations,” touched on such operator options as graduated commissions, minimum guarantees, flat rates, and location contracts.

Emphasizing that the operator today is a professional who has to sell himself and his service without having to rely on location loans or commission giveaways—Goot noted a major handicap operators place upon themselves. “Don’t make experts out of your locations,” he said. “It’ll only cause you problems.”

He pointed out that giving in to location demands for liberal commission arrangements or new equipment



Ed Shroter of IJS leads a seminar at the AOE.



Bill Arkush talks tech troubleshooting in another group.

**'I could never talk like this with operators in my area
because I'm in competition with them,
but we don't have that problem (at the AOE).'—an operator**

only reinforces the location owner's wrong impressions about the coin-op industry.

The seminar turned into a lively discussion (typical of the AOE classroom sessions) with operators inserting ideas they've succeeded with—such as making commission advances to gain favorable commission arrangements, location contracts, and other considerations. It prompted Goot at one point during the exchange to say, "We've always needed a seminar series like this.

"I could never talk like this with operators in my area because I'm in competition with them, but we don't have that problem here," said operator Goot. His point seemed well-taken; operators in the seminar came from 37 states, plus Canada, Mexico, and Puerto Rico. Many echoed the view that a more open discussion could take place in such "intimate" groups.

Friday morning, Fred Skor of Wide World Distributors delivered an address on "Buying New Games in

the 1980s" to an audience of between sixty and seventy operators. Speaking on such wide-ranging topics as the Japanese equipment invasion, the high cost of games, and the high rates of financing, he explained what the operator today should be looking for.

He suggested certain types of "weather vanes" which could help the operator tell beforehand which games are worth buying and which are not.

He noted that one of the highest costs for the operator today is the quick turnover of new equipment. But he added promisingly that the glut of new game models may be giving way to games with longer shelf lives. And as evidence he pointed to new equipment coming out since Midway's *Space Invaders*.

Jon Daugherty, president of LeMans Development Company and an expert on various phases of arcade operations, chaired a seminar panel Friday morning on "Internal Cash Controls and the Absentee Owner."

The session focused on the advantages of token operations, the ITS cash interrogator system (as explained in the September, 1979 issue of *PLAY METER*), and polygraph testing.

Noting that employee theft in the United States amounted to around \$10 billion last year, the polygraph expert on the panel said lie detector tests are still a valid method of combatting that problem for operators.

Friday afternoon saw a seminar devoted exclusively to distributorships. Chaired by Chuck Arnold, general manager of the North East Region of Rowe International, the seminar touched on inventory control, labor costs, and various other concerns of distributors.

The session was well-attended and well-received by distributors. And Arnold was equally enthused by the seminar's reception. "This is something we've always needed," he said at one point during his presentation. "we distributors have always needed

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...OUR WRAPPING

...OUR BUTT

...AND OUR PLUG

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this opportunity to get together and exchange ideas in this type of forum."

At the same time, Carol J. Kantor hosted a session on "Creative Marketing." The president of Business Builders/A Full Service Marketing Agency said "creative" may define as "it works." One definition of marketing, she said, is whatever influences customers to pay money for a product. "If you promote it, people are going to buy it," Ms. Kantor summarized.

She pointed to the growth of arcades and said, "Basically it boils down to presentation and promotion." The crowded seminar heard the marketing specialist give out useable tips and the group shared ideas on the effectiveness of certain items, such as billboard advertising.

Topping off the session was a visit from the personnel of D. Gottlieb Company's own promotion layout at the AOE—the walking and talking (and pinball-playing) Spider-Man, the Circus clown, and the "ring-master" lady, Sandy. Ms. Kantor used their examples as gimmicks that are "off the wall" but which people will remember.

(In New Orleans, the costumed Spidey was used for a children's

hospital ward visit. Alvin Gottlieb, vice president of the pinball firm, said, "The PR we got was a big boost for the industry.")

Gary Stern, president of Stern Electronics, Inc., told another Friday afternoon seminar session his fears for more repressive legislation against amusement games in upcoming years.

After June 30, 1980, definition of gaming devices will be taken out of federal jurisdiction and left to the states, where confusion over definition is what Gary Stern expects to be the rule.

Prohibition of amusement machines along with marginal, or "gray area," games such as bingos, may be expected in some jurisdictions soon, Stern warned, arguing that "history can repeat itself if this industry doesn't do something to stop it."

His suggestions to curb prohibition of amusement machines: work with government officials of the local region to watchdog new legislation, and to file suit on constitutional grounds if necessary.

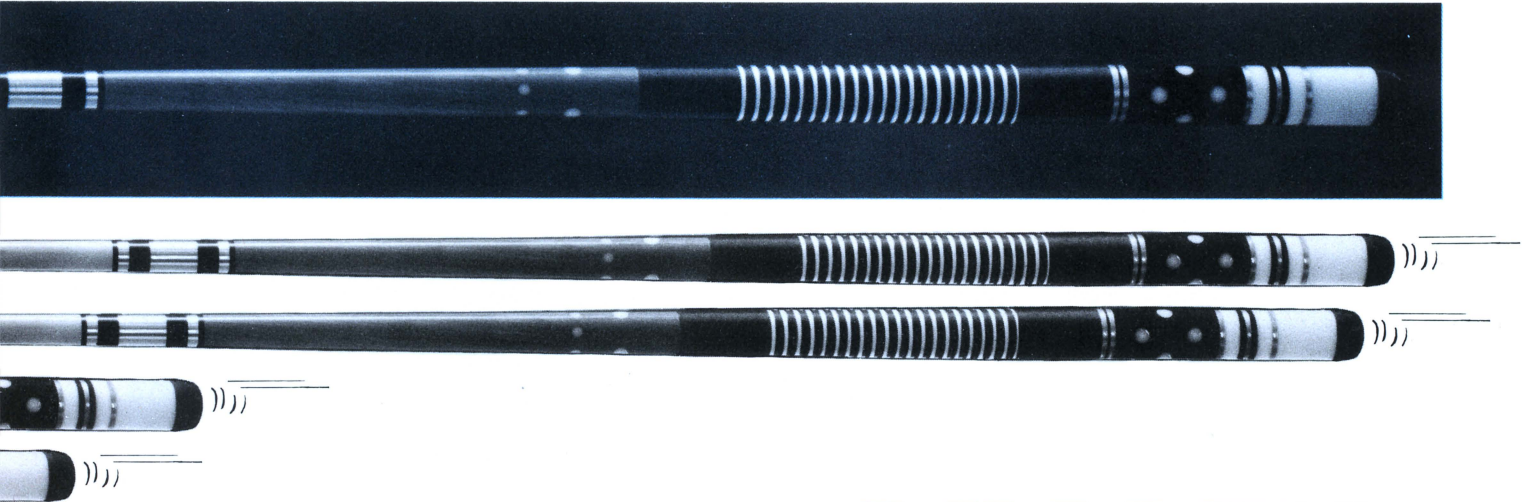
And in a seminar at the same time, Steve Isaacson, vice president and general manager of Sega Center,

was reporting on one local planning commission's resistance to zoning for an arcade. The reasoning? The planners had associated amusement machines and slot machines.

In this session, conducted by Jon Daugherty and Isaacson, "Shopping Centers and Arcade Leasing," operators were given a pessimistic report on the likelihood of finding profitable mall locations. (For more on the subject, pro and con, see PLAY METER, May, 1980, pages 8 and 46.)

But the operator with a viable location in mind was advised to check first of all with the local building inspector or planning director about the probable chances of zoning an amusement room. Otherwise, support of the chief of police should be solicited. However, if citizen opposition develops, continuation of developing that shopping center location may not be worthwhile, the seminar leaders advised.

↑ ↑ ↑
Sessions at the March show also included: "Depreciation Facts and Fallacies," "The Pinball Tournament: A Practical Approach," "Return on Investment and Business Profitability," "Old Game Play Appeal," "New Equipment Purchasing for the 1980s," and others.



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Why conventions are attended

**'Economics has a lot to do with it.'
—a meeting planner**

Conventions will have a different face, a new character in the 1980s, say observers of confabs and mass meetings.

The reason, says Charles Rixse, president of the International Association of Conventions and Visitors Bureaus, is the world situation. "Crisis" times expectedly produce a habit of the business, industry, and academic communities to meet with their own special interest groups to talk, learn about, and work out their mutual problems.

In a statement that relates well to attendance at the first-ever Amusement Operators Expo held in March in New Orleans, Rixse was quoted in "Sky," a publication of Delta Air Lines.*

Rixse observed that business meetings have become more "unconventional." He said, "In the past ten years conventions have started going back to the basics, and that is the exchange of information. They have become the nation's largest institution of continuing education in areas of politics, economics, medicine, social issues, and international affairs."

"Companies and associations recognize they can no longer deal only with internal affairs at conventions. Delegates are too knowledgeable, too activist in all these areas and they are demanding solid, usable information."

In the "Sky" article, Rixse continued, "Economics has a lot to do with this shift. If people spend their money to go to a convention today, they want their money's worth in terms of learning something they can put to use in their work or their daily lives. Meeting planners know they are under the gun and make this happen."

Unquote, Mr. Charles Rixse.

—by Ray E. Tilley

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Informational seminars, such as these sessions at the AOE, are prime draws of conventions in the 1980s, say experts.



Business people are vitally interested in competitive methods to cope with the current 'crisis' economy, and the coin-op industry is no exception.

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Expo wrapup:

The industry gets its springtime show



Hal Lohse of Kimco shows off some of his company's electronic equipment at the AOE in New Orleans.



Astro Fighter, exhibited by Data East and licensed to Gremlin, was a big hit at the show.

Numerous arcade/video and pinball games were unveiled before 1,292 industry people at the first ever Amusement Operators Expo, March 20—22 at the Fairmont Hotel in New Orleans.

It was a strong showing for a first-time-ever industry event, comparing favorably even with the AMOA Show in its early years. And because of that positive acceptance by attendees and exhibitors alike, the Amusement Operators Expo will definitely become an annual event, says Play Meter Editor and Publisher Ralph C. Lally II, the show's sponsor.

"There's no question that the response indicates the need for this kind of show at this time of year," said Lally. "We are extremely pleased by the industry's reception to this event. The major manufacturers were well-represented and unveiled some really innovative and exciting equipment.

"And, as for the attendance," Lally continued, "I think it surprised a lot of people that a show with this format would draw from all over the United States. Sure, we would have liked bigger numbers. We would have liked a 5,000 attendance the first time out, but I think we've laid the necessary groundwork for even better shows in the future. It was very encouraging to get the overwhelming positive response to the show that we got. The attendees left with a positive opinion about the show. In fact, we got back a 98 percent written response positive to the show; 98 percent of the seminar attendees said they would recommend this show to others—98 percent! That's almost unheard of."

Lally continued, "I think that indicates the time has come for this type of convention and trade show for the coin-op amusement industry. Actually, economic conditions have made it necessary for this industry to have such an event which can address itself to the real problems and concerns of this industry. We have always needed a convention and trade show with a seminar program that would help the operators become better businessmen."

The main reason for the timing of the show, Lally explained, was to coincide with the game manufacturers' heavy release of new equipment for the spring buying season. And that estimation held true. There was a lot of equipment being shown for the first time.

PINBALLS

All five pinball manufacturers introduced dynamic new pinball machines which show perhaps there'll be that much-awaited trend



Exidy's Bandido got considerable play and may turn out to be the season's 'sleeper.' Not a space theme—for a change.



Cinematronics' Rip Off attracted crowds with its novel team play appeal.



Gottlieb's Series 80 operator support equipment was demonstrated at the AOE.

back toward more pinball play. It was a healthy sign for convention-goers; the major pinball manufacturers were all trying to outdo one another, not so much with the fanfare associated with their games, but with the games themselves.

Bally, which recently debuted *Silver Ball Mania* and had that game on display, unveiled a wide-body masterpiece called *Space Invaders*. The game features the hypnotic sound effects of the video game by the same name. That and the Paul Faris artwork make this Bally effort the most distinctive piece of pinball art ever presented.

The coin slot of the *Space Invaders* pin also attracted the eye of many operators at the show. Bally is so confident *Space Invaders* will be well-received by players that it is sending the game out on 50 cent play. The company's marketing director, Tom Nieman, told *PLAY METER* early test reports on the game show the move to fifty cents is reaping big rewards.

Meanwhile, Williams—which has been riding a crest of hot games ever since last year's smash hit, *Flash*, and which has released such recent hot items as *Stellar Wars*, *Gorgar*, *Time Warp*, and *Laser Ball*—removed the wraps from another sensational conventionally-sized game, *Firepower*. The game includes not only a talking capability but also a captive ball feature which, when achieved, gives the player the feeling he is playing against a pinball machine that has gone amuck—three steel balls caroming around the playfield can do that for the player.

Additionally, *Firepower* introduced a second major player-controlled feature—the other feature being, of course, the flipper. It's the lane-change feature which the player activates with his right flipper. Such an innovation opens the door for all sorts of new, interesting play features for pinball.

Stern, which previewed its *Big Game* back in November, was ready for release on that pinball at this time and showed the game again, along with its newest offering, *Ali*.

In addition, Gary Stern, president of Stern Electronics, used the forum of the Amusement Operators Expo to hold a press conference announcing that Stern, in conjunction with *National Lampoon* magazine, would sponsor a charity promotion for the benefit of the National Heart Association.

Gottlieb held some promotions of its own while in town for the show. The Northlake, Illinois manufacturer



Arnie Chihak of International Billiards with the Brad machine.



Irv Jeffries stares intently into Game-A-Tron's Zap.



Emil Marcet, Warren Kelley, and Richard Shelton with Valley's table.

held pinball contests at various locations throughout the city of New Orleans, challenging local players to beat *Spider-Man* (who was present) at his own game.

The company showed off its first in the line of System 80 pinball games—*Spider-Man*, some support equipment, and a new pinball offering called *Circus*.

Game Plan's marketing efforts were handled by Tournament Marketing International (of Tournament Soccer fame). The company's current line of pinballs includes the cocktail pin, *Vegas*, the upright, *Coney Island*, as well as Game Plan's new release at the show, *Super Nova*.

VIDEOS

But with video game play on the upswing again, much of the operators' attention was focused on the TV equipment.

The big attraction in video games appeared to be *Rip Off* from Cinematronics. This game, which was making its debut at the New Orleans show, employs the patented Vectorbeam monitor and features one- or two-player action against the machine.

It's a novel twist. Most games which offer two-player action, pit player against player. But *Rip Off* features team play with two players playing against the machine.

The game is themed around everyone's big hangup these days—energy ripoffs. It's a space action game where the players' spaceships guard some fuel tanks located in the middle of the screen. Bandit ships appear in groups of two or three, at ever-accelerating speeds, trying to steal the fuel tanks and escape before being either shot down or rammed by the players' spaceships. While the game is appealing as a one-player game, its special attraction comes when two players compete together against the machine. That's because the two players, working in tandem, can keep the fuel tanks longer. For that reason, the two-player version creates a longer-playing game and, while adding to the player's enjoyment, at 25 cents per player pricing, doubles the operator's take during that playing time span.

Data East showed off its *Astro Fighter* which, it was announced at the show, would be marketed by Gremlin in the upright configuration. Data East, which is the U.S. arm of Deco, a Japanese-based video game concern, will market the game in the United States in the cocktail version only. Data East also showed off its

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CIRCUS



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Mole Hunter game which features a terrifying possibility—a killer mole.

But *Astro Fighter* was the big attraction here. It is, of course, another space theme game. The player controls a rocket ship at the bottom of the screen which has its mission to weather wave after wave of attackers. As the player destroys each wave of enemy ships, another wave of attackers appears on the screen, greater in number, moving faster, and firing more missiles.

The game includes a visually exciting scene which occurs after the player destroys the mother ship. After the mother ship is destroyed, a special re-fueling hookup is drawn and the player starts over again, with even more enemy ships to defend against.

Universal USA, which is coming off two successful releases (*Cosmic Guerilla* and *Galaxy Wars*) introduced still another space theme game at the New Orleans show. The game, *Cosmic Alien*, like *Astro Fighter*, features a player-controlled spaceship at the bottom of the screen which must fight off a legion of invading rocket ships. In this game, enemy fighters peel off in random numbers and come down on the player's ship, firing and/or trying to crash into the player. And the game appeals to a different player emotion — terror. When the second-to-last spaceship is destroyed, the last remaining spaceship unfolds itself into a visually terrifying bird-like predator about four times its normal size and sets down on the player's spaceship. This surprising development creates in the player a sense of urgency at destroying the last and most terrifying alien.

Two games which were previewed at the AMOA Show in November but which were not available for release by their respective companies until now were also on display at the New Orleans show.

Midway's *Galaxians* and Exidy's *Bandido* were prominently displayed and carefully examined by attendees. Midway's *Galaxians* has already garnered more than its fair share of attention, being tabbed by most industry people as the heir apparent to *Space Invaders* among *Space Invader*-theme games.

But Exidy's *Bandido*, which has been waiting quietly in the wings, may well turn out to be the year's big sleeper. The game is somewhat offbeat in this time of space-theme games, and as such it appeals not only to video game enthusiasts but also to players who want to play a video game that, for a change, is not



The Universal USA crew featured Cheeky Mouse and a sensational Cosmic Alien game.



The Gottlieb troupe showed off Spider-Man and Circus, both the games and the personalities.



Zamperla's Punch-Ball and various kiddie rides attracted a lot of attention.



Far East Video, exclusive U.S. distributors for Nintendo, showed off the Sheriff cocktail tables.



Mickey Parson [he's on the left], Gottlieb's Circus clown, and Carol Lally of Play Meter at Amusement Supply's special drawing at the Expo.



Wico exhibitors reported heavy business during the three-day event.

themed in some way with outer space.

Bandido (and *Sheriff*, in Far East Video's cocktail version of the same game) is based on the theme of the old west. The player-controlled sheriff is surrounded by a number of mean-looking hombres who are gunning for the man with the badge. Terribly outnumbered, the player must dodge the banditos' slow-moving bullets and, at the same time, take aim and shoot back at the villains. When their number begins to dwindle, a few of the bandits break the rules (as bandits are wont to do) and they race onto the sheriff's turf and try to do him in.

Taito America displayed an interesting space theme game which should draw a fair amount of player appeal. Its video game, *Lunar Rescue*, features a mother ship which lowers a player-controlled space craft down onto the lunar surface.

Those who thought the moon was uninhabited obviously have never been there, because the Taito game depicts numerous spaceships patrolling the lunar surface, trying to keep players from rescuing the stranded astronauts on the moon. Maneuvering one's spaceship down safely to the lunar surface without crashing into one of the enemy patrol ships or on the lunascape is a feat in itself; but, after having successfully landed, the player waits as one of the stranded astronauts runs out and gets on board his spaceship. And the ship starts back up.

Now the real challenge takes place. The enemy ships start firing on the player's ship. And even if the player successfully eludes the enemy as he weaves his path back to the mother ship, he still has to time his approach perfectly or else he fails to hook up with the rescue ship and the astronaut falls to the ground—a horrible death!

Game-A-Tron featured a video game, *Space Zap*, which calls on the player's reflex action. The game features a spaceship hovering over a lunar surface, and enemy spaceships, firing from one of four directions, trying to destroy the player's craft. The game becomes a challenging reflex game where the player, by hitting the correct buttons, can shoot down the enemy missiles and enemy ships before they can damage the spaceship.

Elcon Industries of Royal Oak, Michigan showed off its *Cosmic Attackers* video game which comes with a full six-month warranty. That game, plus *Collision*, *Super Video Blackjack*, and *Royal Flush Drawpoker*, are available from the Michigan manufacturer in both cocktail and upright models, with the same

warranty.

IJS, Inc. of Fort Worth, Texas showed off its video game line, including *Moon Alien* and *Two in One Rolling Crash*. The company, which is the exclusive importer of Nichibutsu products, also hosted a hospitality suite for convention-goers after the show's regular hours. Both *Moon Alien* and *Two in One Rolling Crash* were introduced at the AMOA Show, but were not ready for release until the spring.

Other video equipment at the show included Gremlin's *Mini Monaco GP*, which is an upright version of Gremlin's immensely popular *Monaco GP* sitdown driving game; and another Gremlin offering, the *Dual* game concept, featuring both *Head On* and *Deep Scan*, two recent Gremlin offerings.

Midway showed, in addition to its *Galaxians*, its *Deluxe Space Invaders* in both upright and cocktail versions, its *Bowling* game and a new version of its *Deluxe Baseball* game. Exidy also showed its *Tailgunner 2* sitdown game, and Sircoma displayed its *Draw Poker* video machine.

OTHER EQUIPMENT

The *Instant Replay* machine from Video Dynamics, which offers users instant analysis of their golf swing, baseball swing, jump shot,



Taito's Lunar Rescue features a challenging video adventure which should keep players coming back.

etc. attracted a fair amount of attention at the show, simply because it was a novel application of the coin-op concept. [For more on *Instant Replay*, see *PLAY METER*, April 15, page 51.]

Another novel coin-op concept came from Split Second of Minnesota, which introduced itself and its

coin-op *Reaction Timer* to the industry. The small handy device, which is the size of a cash box, measures in micro-seconds a player's reaction time. The bar-top device, company officials say, is best used in connection with promotions at the bar location. At the show, one of the *Reaction Timers* was awarded to Linsey Hurd of New Orleans, who during the three-day show, registered the fastest reaction score on the device, of the many who tried it.

Three manufacturers displayed updated kiddie rides—Universal Visual Audiotronics, Zamperla, and Waite Manufacturing. All three companies showed wide varieties of kiddie rides which are not only a departure from the standard concept of coin-op rides but which are designed to be profitable returns on investment pieces in their own right.

Valley Manufacturing showed off its complete pool table line and cocktail pinball, and all other major pool table lines were also well-represented at the show—Dynamo, Irving Kaye, U.B.I., and U.S. Billiards (through Tournament Marketing International, which was showing off its Tournament Eight Ball table). And American Shuffleboard, with its wide range of table equipment, showed off its shuffle alleys and other coin-op equipment.



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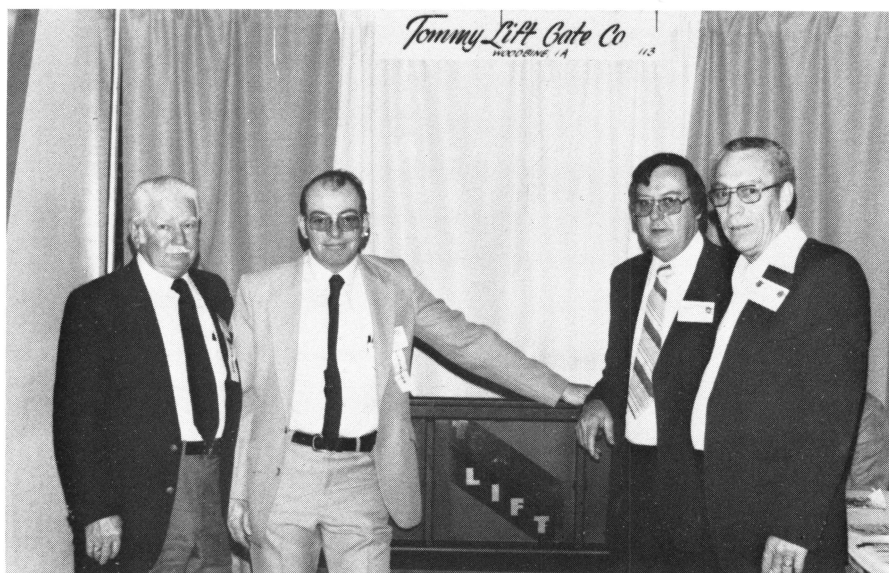
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In the Tommy Lift gate booth, from left, are John Pentecost and Jerry Mathison and, from Peach State, Devon Griffin and Ken Poston.



James Grymyr [center] and Pete Petropoulos look on as Play Meter's Ralph Lally checks out the Split Second Reaction Timer.



Galaxy Design exhibited, among other things, a coin-operated Haunted Library.

Tournament Soccer, O.B.A., Dynamo, and Tornado all showed off table soccer models.

Additionally, Twelve Signs, Tommy Gate Manufacturing, Metaphaser, Ready Lift, and Galaxy Design showed off a wide range of products for operators—from horoscope machines, moving equipment, and spook house accessories.

SUPPORT AND SUPPLY

Support and supply companies always make up a large number of exhibitors at any trade show in this industry, and such was the case with the first-ever Amusement Operators Expo.

Among those exhibiting their wares were Wildcat Chemical, which showed off its line of chemicals for the amusement industry; and a host of billiard and game suppliers—Amusement Emporium (with its new address), Amusement Supply (showing off its Universal B cueball), O.B.A., D&R Industries, J—S Sales, Wico (which showcased the Parametric Analyzer), and International Billiards (which had its simple-to-operate Brad machine on display).

Also showing off their lines were Kimco, which displayed its line of electronic tool supplies, and Kurz-Kasch, which showed off its Signature II test equipment.

Other exhibitors included a local distributor, AMA Distributors, which showed off a complete line of the companies it represented—including the Rock-Ola phonograph line; Rowe International; Antiques International, which showed off some antique penny-pusher games; Coffee-Mat, which displayed its latest cocktail table and a video game called *Nimbus* (another kind of reaction-tester); Dusa Corp.; Merit Industries; Universal Amusement Distributors, which is showing off a new piece of equipment; Acorn, Inc.; Green Duck, a token manufacturer; and Coin Acceptors, Inc.

IMPROVEMENTS

For the 1981 AOE, plans are already in action to improve accommodations for attendees and exhibitors. To begin, the exhibit viewing fee will be reduced to \$5. Seminar fees will be \$15 per session.

Seminars will not conflict with exhibit hours. The classroom sessions will run from 8:30 a.m. to noon, with the exhibit floor open from noon to 6 p.m. Food and coffee will be provided in the exhibit area.

The show will run from Friday to Sunday rather than this year's Thursday to Saturday, a schedule that may have hamstrung some attendance by starting on a working day.

Badges will include a person's name, company, city, and state, and classification: operator, distributor, manufacturer, exhibitor, etc.

International attendance can be expected to increase at the 1981 AOE, which will also be held in New Orleans. (The 1982 show is planned for Chicago.) A number of exhibitors indicated, almost immediately after the March show closed, that they wanted more booth space for next year. Exhibitors at the show numbered 55, filling 140 booths.

Of the 1,292 attendance figure, according to Conference Management Corporation, the show's organizers, the status of attendees is shown in the following percentages: distributor sales or management, 18 percent; arcade ownership or management, 30 percent; route owner/operator, 33 percent; and the remainder being "other," including technicians and those involved in design and development.

As well as being operator-oriented the first AOE was hardly a regional show. Attendees came from across the nation and from Mexico, Canada, and Puerto Rico.

Media coverage did focus regional attention on the AOE and on the



Mark Waite of Waite Mfg. showed off some very sophisticated kiddie rides.

industry, however. Three New Orleans television stations brought camera-and-mike crews to the floor of the Fairmont Hotel. The New

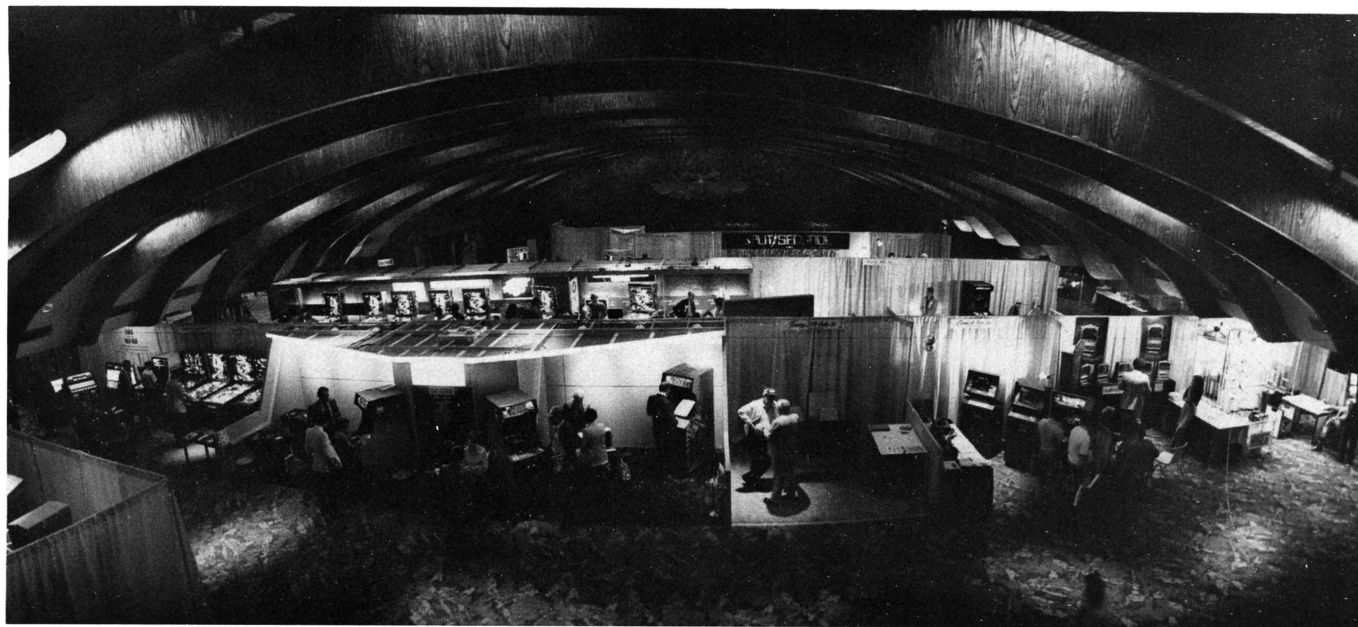
Orleans Times-Picayune gave feature coverage of the AOE including a weekend tabloid (entertainment section) cover spread.

The relatively small crowds on the exhibit floor enabled more time to be spent with customers and helped equipment evaluation by the operators—with no lines of kids playing and standing around the new games.

It marked a departure from the social aspect of trade shows. The AOE introduced a "down to business" approach with seminars offered concurrently with the show. (See two related stories.)

Certain features will be improved next year as a direct result of comments made by those attending in March. A cocktail party next year, for example will be free, with no cash bar. Every effort will again be made to avoid time conflict with other trade shows. And the quality of seminar subjects and speakers will be upgraded wherever possible.

In all, New Orleans proved to be an ideal location for the first ever AOE. Its central location, pleasant weather, and colorful locale were attractions commented on by virtually all who came to the Amusement Operators Expo.



And when the show closed, as the hall was being cleared, some were still doing business.

Come to New Orleans for Expo 1981

Thoughts on the Expo

An incredible and noble idea

By Roger C. Sharpe

Well, the Amusement Operators Expo has come and gone—and with it comes the question of the need and acceptance of this type of convention or any other that tries to break new ground and start up for the first time.

On the surface it was incredible. An incredible display of booths and equipment in the regal Fairmont Hotel in New Orleans. Predicated on the idea that a springtime affair would benefit the manufacturers and their timetable for unveiling games, the show served as a springboard by offering much in the way of equipment.

But more importantly here, the emphasis was on seminars—an opportunity to listen to a varied array of speakers expounding on so many of the important issues of this total industry. This chance at a forum for problems, answers, directions and questions is definitely a necessary part of the coin-machine business which all too frequently tries to go about its merry way never thinking about ramifications to specific things that may arise, whether it be legal environments, manufacturing techniques and problems, operating difficulties and a whole host of other worthy issues. The idea is sound, all that's necessary is for the various people in the business to realize the place for such an event. And although the effort is a noble one, total industry involvement and recognition is going to be vital to insure its ultimate success.

In the way of equipment, and pins in particular, the draw of the show was the preview of Williams' *Firepower*, Bally's *Space Invaders*, Gottlieb's *Circus* and *Spiderman*, Stern's *Muhammad Ali*, and Game Plan's *Super Nova*. Speech and sound came across as the major components, although one can see multi-ball play on the Williams machine and the use of artwork and sound on Bally's game that's anything but alien to the eye and ear. At Stern the

addition of a celebrity of the stature of Ali is an incredible coup that should pay off in recognition and getting this company's name into the news. Helping toward this goal was the inclusion of a charity tie-in with the Heart Fund put together by TRG Communications which should open many doors since it entails raising of awareness and competition of college students the country-side over. It is the type of effort that this industry needs to offset any old misconceptions about the image and heritage of pinball machines.

But on a different front, the full sampling of machines gave an insight into the direction the companies seem to be taking and how strong the competition is getting and will continue to get. On the whole, the pinball player is going to be assaulted by a variety of games that should satisfy most of his wants and needs on all levels. The games themselves are refining the technology and drawing more on the untapped

potential of solid-state and where it can take the industry.

In looking at the total picture of the show and its value, it is unfortunate that more people weren't there to benefit by it, but first time efforts are difficult at best to get across and one only hopes that next year the purpose and importance will shine through, as well as the opportunity to take a look at equipment during a period of the year that portends the future efforts to come. For this time around, one must be satisfied that the fight is on to get some of those dollars into pinballs and away from videos, although a few notables such as *Galaxian* and *Rip Off* may make that hard to do.

As for New Orleans, it is a contrast in styles and entertainment that glows and begs to be savored. For this writer's first visit, I was not disappointed by the charm of the south and the beauty of a landmark center that conjured up days of Lafitte and Yancy Derringer.



While at the Expo, Roger Sharpe naturally gave flippers a good workout: here, our critic gives *Firepower* a shot.

AMOA decides to freeze fees, continue jukebox fight

By RAY E. TILLEY

Fees for exhibitors and registrants at the 1980 AMOA Show in Chicago will be frozen at 1979 rates, under action taken by the AMOA Board of Directors in their mid-term meeting April 10-12.

AMOA Executive Director Fred Granger noted that the exposition fees received lengthy discussion at the board meeting in San Antonio. But the consensus was "to do our bit to curb inflation." The frozen charges will include banquet ticket prices.

President Robert E. Nims chaired the meeting at Hilton Palacio del Rio, where the "main objective" was a review of past AMOA expositions and planning for the next trade show, at which some 7,000 persons are again expected to attend.

Nims reported that the Hilton chain has given assurance that the new Chicago Hilton will be completed by June of 1984 at the latest. That fall, the AMOA Show will return to the Hilton in the Windy City and "we expect to make its home here," Granger commented. The 1980 and '81 site will be at the present Conrad Hilton, due to the length of time needed for planning a convention site. The 1982 setting will be Caesar's Palace in Las Vegas; the 1983 site will be in New Orleans.

On the jukebox royalties hearings which were under way in Washington, D. C., past President Don Van Brackel reported to the San Antonio meeting that "the hearings are going quite well." The AMOA is basing its economic stand on the results of an independent survey which shows the jukebox sector to be a hard-pressed part of the coin-op industry. The AMOA contends the per-jukebox fee should be held at the original \$8, while the performing rights societies want \$30 to \$70 to be collected from each box annually under revised rates. (See related story on copyright, this issue.)

Granger noted that the civil suit against the requirement for jukebox location listings was still under adjudication (at late April) before the Court of Appeals for the District of Columbia. The costs of this legal fight and the presentation of evidence and testimony before the Copyright Royalty Tribunal has consumed some \$60,000 of the AMOA legal defense fund, said the executive director.

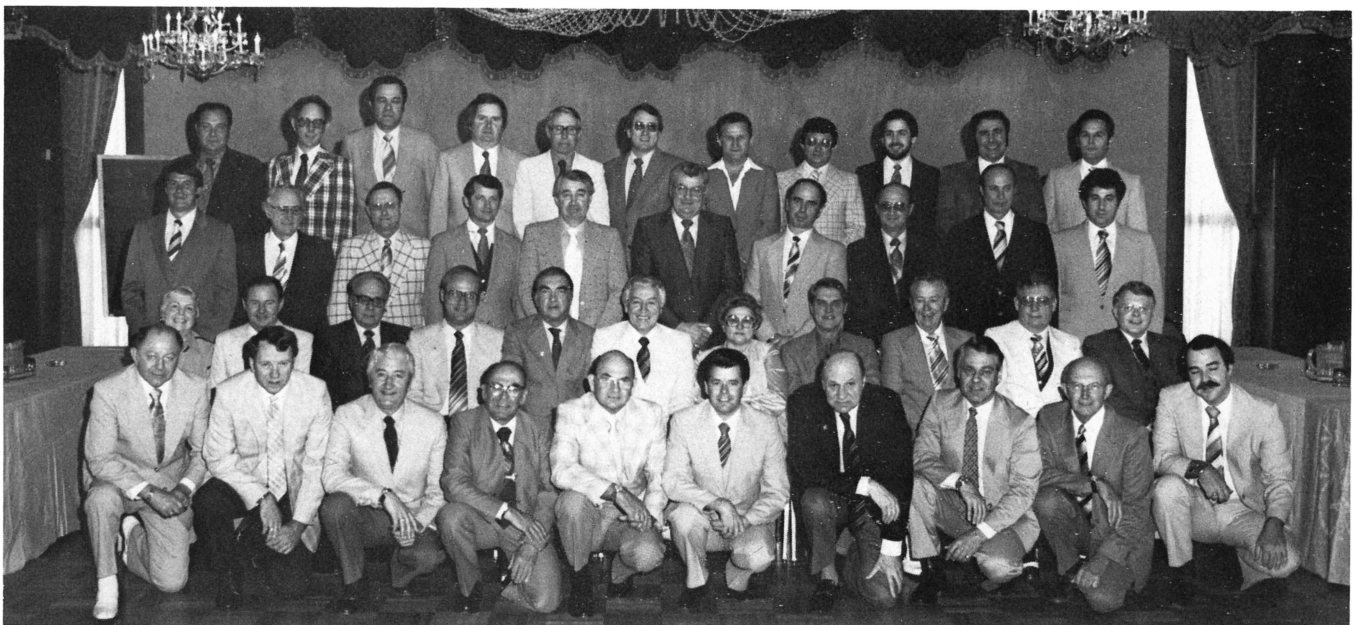
To continue fundraising for legal defense, new ideas will be developed, including fundraising banquets and "the biggest thrust will be at the exposition this autumn," Granger said.

In other matters about the AMOA Show, the board of directors approved tighter spot-checking of ID cards against the names on badges at the show, to combat freeloading use of other persons' badges.

Granger said a national conference of state associations of coin machine operators will be held at the fall convention. A "forerunner" of that national conference was scheduled for the first day of the Ohio Music & Amusement Association's 1980 Exposition, May 16 at Columbus (See related story). The seminar-type discussion will review common problems and goals of state associations, such as dues, new members, and how to administer the association.

In other business, the Notre Dame Seminar series (see May 15, 1980 PLAY METER) was tentatively set for the O'Hare Hilton in Chicago again for 1981. "It may possibly be held in another city if enough people show interest in that," said the executive director. At the mid-term board meeting, most persons favored Chicago because of the ease of transportation from the airport, he noted.

The 1981 board of directors meeting was set for Monterrey, California.



AMOA's board of directors got down to business after this group photo was taken at San Antonio, Texas.

Royalty case continues before copyright panel

By Ray E. Tilley

The main presentations of opposing sides in the jukebox royalty rate adjustment hearings have been concluded in Washington, D. C. hearings and the decision of the Copyright Royalty Tribunal over the per-machine fees is expected to take much of the summer to be made final.

The hearings were recessed April 22, with a date to be set in May for rebuttals from the AMOA and the performing rights societies.

Any adjustment of the present \$8 per jukebox annual royalty fee would stand for the next 10 years—unless a cost-of-living arrangement is included, as advocated by the

performing rights societies.

Both the AMOA and the performing rights organizations ASCAP and BMI have presented statistical evidence as well as testimony to the CRT for their cases.

ASCAP stands for a \$70 per jukebox fee. A spokesman, who declined to be identified, said this amount was derived from studies of the present licensing fees for taverns and night clubs, piped-in music ("mechanicals"), and the amount of jukebox operators' fees paid overseas to performing rights societies.

The \$70 per box proposal is "the low end of the range" shown by this type of study, said one source

connected to ASCAP.

However, BMI suggests a \$30 per-box fee, with this rate subject to changes in the consumer price index over the coming decade. The next fixed rate would be determined in 1990.

ASCAP also advocated the cost-of-living added scale.

Nick Allen, attorney for AMOA, when contacted by PLAY METER near this issue's press time, said the CRT was "quite interested in all the presentations."

Adjudication by the CRT would come some weeks after the rebuttals from each side. After the panel makes a recommendation on royalty rates, rebuttal to that finding will be allowed—a process which will almost certainly draw the case through the summer.

The CRT recommendation becomes effective 30 days after its decision unless a challenge is issued by any party to the royalties matter.

The latter witnesses before the CRT in April included: Lester Rieck, representing Rock-Ola; John Strong, a Chicago operator; operator James Watkins of Albemarle, N. C.; former AMOA President Russell Mawdsley; Harvey Campbell, a Pittsburgh one-stop distributor; Leo Droste, AMOA staffer; and Don Van Brackel, past AMOA president.

Van Brackel told PLAY METER that a main part of the evidence for the jukebox operators' case, a survey of operators by Peat, Marwick, Mitchell and Company, shows "the true picture of the industry at this point." The sampling of some 400 operators was presented to the CRT as showing the phonograph industry hard-pressed, having fewer collections over a period of years. A continued \$8 per-box rate, the AMOA contended, represents a greater percentage of receipts going to royalties under these conditions.

Attorney Allen termed the polling "the most useful survey ever done" for the jukebox operators' case.

In the AMOA case before the CRT, other witnesses included Michael Giblin, director of special services for Rowe International; and operator Mrs. Leoma Ballard of West Virginia; and Harold Schwartz, Seeburg distributor, of Chicago.

LICENSES & TAXES

Editor's Note: Due to limitations of space in this issue, our continuing listings of local regulations is omitted. We will resume the licenses and taxes feature next month in PLAY METER. In the meantime, readers' input is invited, using the form below.

READER'S INPUT

We will continue to run lists of license and tax regulations in local communities and states, as reported by our readers. Changes, in particular, should be reported. Let us know what the license or tax regulation is in your community and state and we, in turn, will communicate with the rest of the industry. The information that you supply may well help operators elsewhere head off problems.

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AN EXCLUSIVE INTERVIEW
by Richard Leslie

Not knowing much about the game of pinball, I was a little apprehensive about meeting one of the "superstars" in the game. But it's all part of my job. So I left Chicago to track down the busy Stern Ball. Two weeks later I caught up with it inside an arcade in Melbourne, Australia. The Ball was kind enough to take a few moments off to talk.

Leslie: What makes a Stern game so special? I thought all pinball games were alike.

Ball: *Are you kidding? Some games can put a ball to sleep. But you've got to stay on your toes—err...I mean rounded bottom—all the time in a Stern game. The action's always fast!*

Leslie: Is that what you like most about a Stern game? The action?

Ball: *Yeah... The hits and bumps and all the exploding lights and sounds get me into the game fast. The old adrenalin starts flowing immediately and I end up getting lost in the competition.*

Leslie: You mean there's competition between you and the player?

Ball: *Of course... That's what the game's all about. Sure I appreciate a perfectly timed gunch or a great release on the flipper. But I sure do love to see their faces when I go straight down the drain.*

Leslie: One last question... If given the chance, would you add anything to a Stern game?

Ball: *That's hard to say... Stern's always innovating the game so... oh yeah... cheerleaders! Football has them, why not pinball? How 'bout shooting a game before you go?*

Leslie: Better not... I gotta catch a...

Ball: *C'mon... just one little game...*

Leslie: Well... okay... but just one...

Ed. Note: Leslie has yet to return from Melbourne.

STERN

“You ain’t seen nothing yet!”

STERN

Program set for Ohio expo

One of Ohio's leading advocates for protecting the business and consumer sectors, State Attorney General William J. Brown, will be the featured speaker at the Ohio Music & Amusement Association's 1980 Exposition of Music & Games, May 16 and 17.

Tommy Thompson, exposition chairman, announced the attorney general will address issues facing the amusement and games industry in Ohio at the luncheon meeting, Friday, May 16 at the Columbus Hilton Inn, 3110 Oletangy River Road, Columbus 43202.

Brown, often referred to as "the people's lawyer," reputedly has set the pace for aggressive enforcement of consumer protection laws in Ohio.

Thompson said other speakers include Robert E. Nims, AMOA president; AMOA Executive Director Frederick M. Granger; and OMAA President James H. Hayes.

In addition, Saturday's seminar line-up on May 17 will feature "Education: Key to Success in the '80s" as the theme, with hundreds of

operators involved in these topics' discussion:

1) "Increase Profits by Analysis and Control" with John Estridge of Southern Games, Lewisburg, Tennessee

2) "OMAA's Mini-Service Schools—A Practical Solution" with Greg Sabin of Elum Music, Massillon

and Jack Silvernell of Hilltop Vending and Distributing, Cincinnati

3) "High Reliability Component Removal and Board Repair" — Roy A Cederlund, KIMCO, Mentor

4) "Is Your Automotive Fleet at Peak Efficiency?" — Don R. Kraus, field engineer of SOHIO's sales technical division.

OMAA's Hilligan steps down

The OMAA Board of Trustees announced it regretfully accepted the resignation of President Dennis H. Hilligan (Pioneer Service Company, Cincinnati) at its regular meeting of March 27.

Hilligan asked to be relieved of his regular duties due to increased business and family considerations. In a letter Hilligan said, "This decision has been very difficult to conclude, but certain business priorities at this time cause me to ask you for your understanding and acceptance."

During his tenure beginning in

1978, OMAA tripled its membership and embarked upon an ambitious public relations campaign, developed a series of educational seminars and mechanics schools, and sponsored a number of other service-type activities for Ohio's music and games industry.

Vice President James H. Hayes (Gem Music, Dayton) was to head the association through its May 16th annual meeting when the trustees would elect officers for the 1980-81 term.



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New system offers equipment tracking



The "old way" was to list pieces of equipment in a notebook as they were purchased. When a machine was put on location, the place and date were written next to the machine number. When a machine was picked up, that location was erased and rescheduled with new information penciled-in.

There was no record of past users or service done to the equipment. Tracking of equipment was like seat-of-the-pants navigating by guess and etc.

Methods Research Corp. of Farmingdale, New Jersey offers "the new system." It consists of five T3P54 panels which indicate location and pieces of equipment in use at that location. The TC-3 "T" cards come in four colors, coded as to type of equipment plus white cards for location. The visible portion of the white card slotted in the panel shows the name of location, address, and phone number. Information on the

lower part of the card includes: name of location owner, contract period, and other information pertinent to that location—when equipment was placed, any servicing done, and when.

On the color cards, the visible portion on the panels shows the type and description of machine. The lower portion carries notes of its date of purchase, warrantee period, dates and locations of its use, service or repairs to machine.

The benefits cited by Methods Research are that the operator can see where every piece of equipment is, including warehouse inventory; the system cuts out searching through files; when a contract terminates, the T-card is filed and used as a permanent record of location relationship. The location and status of machine is always visible on the board, and lifting out the card shows the machine's history.

The firm with 28 years of experience in scheduling systems created the Equipment Location panel specifically for "a more efficient operation" for a coin-op concern, according to J. James Mandy, vice president for sales. He said the results were: "They were able to update their information instantly; they were able to give potential customers immediate information, and their actual scheduling time was reduced to nil."

The T-cards used on the T3P54 panels can be customized to meet the vendors specific needs, said Mandy.

Methods Research is located at 94 Asbury Avenue, Farmington, New Jersey 07727. For the address of a local representative, call: 201 938-6000.

A variety of scheduling systems are available from the firm, including magnetic boards, rotary files, "liquid chalk" boards, and others.

In Memoriam

IRVING HOLZMAN

LONG ISLAND, N. Y. — Longtime New York operator Irving Holzman, president of the Music and Amusement Association, died on March 16 at the age of 68.

Involved in the coin machine industry for more than 35 years, Holzman operated Dolene Industries of Hicksville, Long Island and also owned United East Coast Distributors for a number of years.

He served as president of the MAA since the mid 1970s, succeeding the late Al Denver. He was also a member of the AMOA board of directors.

LEO CAPRONI

RIPLEY, Ohio — Leo Caproni, operator of Maysville Automatic Music, Ripley, died on February 24 after a brief illness. He had been a member of the Ohio Music & Amusement Association since its inception, and he was cited as conscientious and a credit to the industry.

Oregon meet set for Ashland

The "Summer Fun Meeting" of the Oregon Amusement and Music Operators Association is scheduled for August 1 and 2 at Ashland Hills Inn, Ashland, Oregon.

In the city which is the home of a renowned Shakespearian Festival, the amusement and music operators will attend a Shakespeare play on Friday, August 1, and on Saturday an "Olde English Banquet" will be held.

The Oregon AMOA's annual meeting is scheduled for January 16-17, 1981 at the Portland Marriott Hotel, Portland, Oregon. Seminars are set to be held by Dr. Jerry Sequin.

Mali

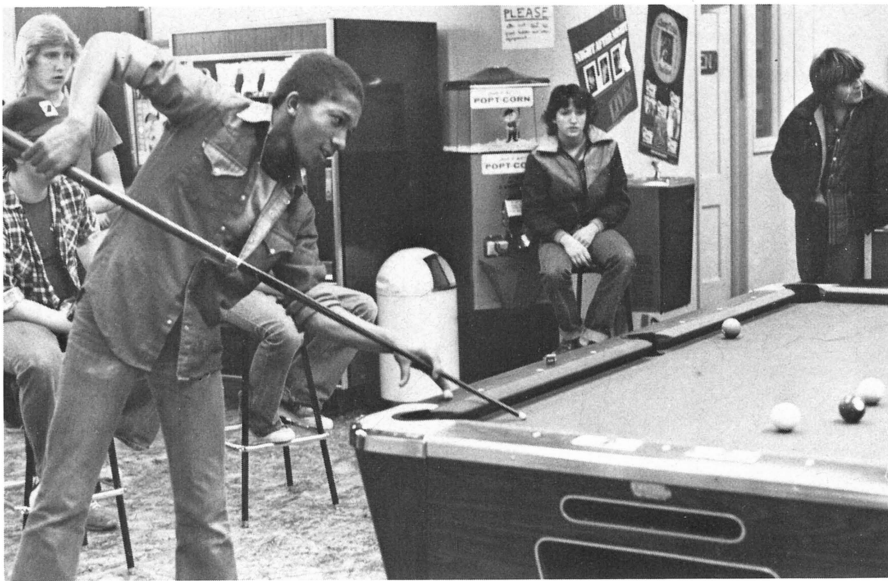
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A teen canteen offers some useful operating methods: discipline the young customers and protect the equipment.

Upper New York nine-week pool tourney closes

The Third Annual Northern New York Eight Ball Pool Tournament with \$3,000 in awards of cash and trophies was concluded Sunday, April 13, with rave reviews given sponsors Valley Vending, Lewis, New York and Upstate Vending, Lake Placid by area contestants, spectators, and news media.

The tournament began January 15 at various northern New York bars and restaurants, continuing for a nine-week period, with eight weekly matches and one ninth-week final (double elimination) to determine A and B class winners from each establishment. The finals were concluded at the Crete Memorial Civic Center in Plattsburg.

The winners of this year's Northern New York Eight Ball Pool Tournament are: A Division trophy winners — first place, Bert Hough, Bernie's Pool Hall, Sarnac Lake; second, Mike Meyer, Sportman's Inn, Wilmington; third, Bob Jacques, Riverside of Wilsboro.

B Division trophy winners: first, Leon Buchard, Cider Shed, Peru, New York; second, Scott Bonhomme, Della's Inn, Peru; and third, Francis Landry, Korina's, Plattsburg. Twenty-four others also participated and collected cash prizes in A and B divisions for a total of \$3,000 given away.

Tournament Marketing International of Seattle, Washington, by special arrangements with local Rowe distributor Bob Calten, Albany, supplied their new *Tournament Eight Ball* table. The equipment reportedly received compliments for the trueness of the table's playing surface and the lively action of the rails and roll of the cloth, according to a spokesman for the pool tournament.

Quoted...

'WALKER'S LAW' "Associate with well-mannered persons and your own manners will improve. Run with decent folk and your own decent instincts will be strengthened. Keep the company of bums and you will become a bum. *But* hang around with rich people and you will end by picking up the tab and dying broke." — attributed to Stanley Walker, of the *New York Herald Tribune*

'Image' helps games

By PEGGY ROBARCHEK

A change of emphasis in the operation of a Grand Island, Nebraska community center resulted in a better image for the games offered to youths and improved care for the equipment.

The religious records have disappeared from the jukebox and movie posters have replaced the graffiti on the walls at the Community Recreation Center, corner of Second and Sycamore.

Just a year ago, the city of Grand Island was ready to close the doors to the teen center permanently. Complaints about vandalism and rough-neck teenagers and prayer instead of discipline convinced many people the center was a failure.

But things changed. "The complaints about the teen center have stopped," said Mayor Robert Kriz. "I haven't had one for six or eight months."

The center was given a stay of execution with the hiring of Steve Paustian as administrator in April of 1979. And Paustian said recently he is confident the stay may become a permanent reprieve, thanks to the director he hired and the changes made at the center.

"The first problem I noticed was the lack of discipline," said Paustian. "The kids were pretty much out of control so my first thought was to get some rules set down."

Fights have been banned at the center, as has religious counseling. A few teens who fought when Paustian and his new director, Paul Zimmer,

took over weren't permitted to return to the center for several months.

"Some of them are back with different attitudes," Zimmer said. "And some aren't back at all."

Lost and broken equipment was another problem Paustian and Zimmer attacked.

"They knew they could break pool cues and they did," Paustian said. "There were three or four broken each week."

Now, a 50-cent deposit for checking out equipment is returned only when equipment is returned safely. No one seems to break or lose equipment at the center these days, Zimmer says.

"The reputation is cleaned up to the point I think we're going to start getting some different kids in here, kids who were afraid to come before," Paustian said. "The kids that were always here are still here, but they've developed a respect for the center."

He stressed that the center isn't just for teenagers, but for young people of all ages and adults. Besides pool and foosball, racquetball and basketball courts are also available at the center, which is open Thursdays, 7:30-10 p.m., and Friday and Saturday nights, 8 to midnight.

Also, he plans to offer the center to church, school, or other groups for a minimal fee on nights when the center is closed.

The writer, now living in Charlotte, North Carolina, filed this report with the Grand Island Daily Independent. Reprinted with permission.

Play Meter Equipment Poll

Here are the June results of PLAY METER's subscriber survey ranking pinball and video games. Standings are compared with games' rankings in May's poll.

Top Pins

JUNE	MAY	JUNE	MAY
1. GORGAR/Williams.....	1	11. FUTURE SPA/Bally.....	8
2. METEOR/Stern.....	2	12. (tie) GALAXY/Stern.....	14
3. FLASH/Williams.....	4	(tie) PARAGON/Bally.....	10
4. STELLAR WARS/Williams.....	3	14. TIME WARP/Williams.....	6
5. SILVERBALL MANIA/Bally.....	15	15. SUPERMAN/Atari.....	16
6. KISS/Bally.....	7	16. SPIDER-MAN/Gottlieb.....	20
7. BUCK ROGERS/Gottlieb.....	5	17. CIRCUS/Gottlieb.....	—
8. NITRO GROUNDSHAKER/Bally.....	12	18. (tie)LASER BALL/Williams.....	19
9. FIREPOWER/Williams.....	17	(tie) TRI ZONE/Williams.....	—
10. GENIE/Gottlieb.....	11	20. HARLEM GLOBETROTTERS/Bally.....	13

Top Videos

JUNE	MAY	JUNE	MAY
1. SPACE INVADERS/Midway.....	1	6. TAILGUNNER/Cinematronics.....	5
2. ASTEROIDS/Atari.....	2	7. HEAD ON/Gremlin.....	9
3. GALAXIAN/Midway.....	—	8. SPACE WARS/Cinematronics.....	6
4. FOOTBALL/Atari.....	3	9. LUNAR LANDER/Atari.....	7
5. SPRINT II/Atari.....	4	10. COSMIC GUERILLAS/Universal.....	10

The PLAY METER subscriber survey of pinball and video games will be a regular feature in subsequent PLAY METER publications. If you would like to join readers currently participating in the survey, simply fill out the coupon below and return it to PLAY METER.

Please print legibly

NAME _____

COMPANY NAME _____

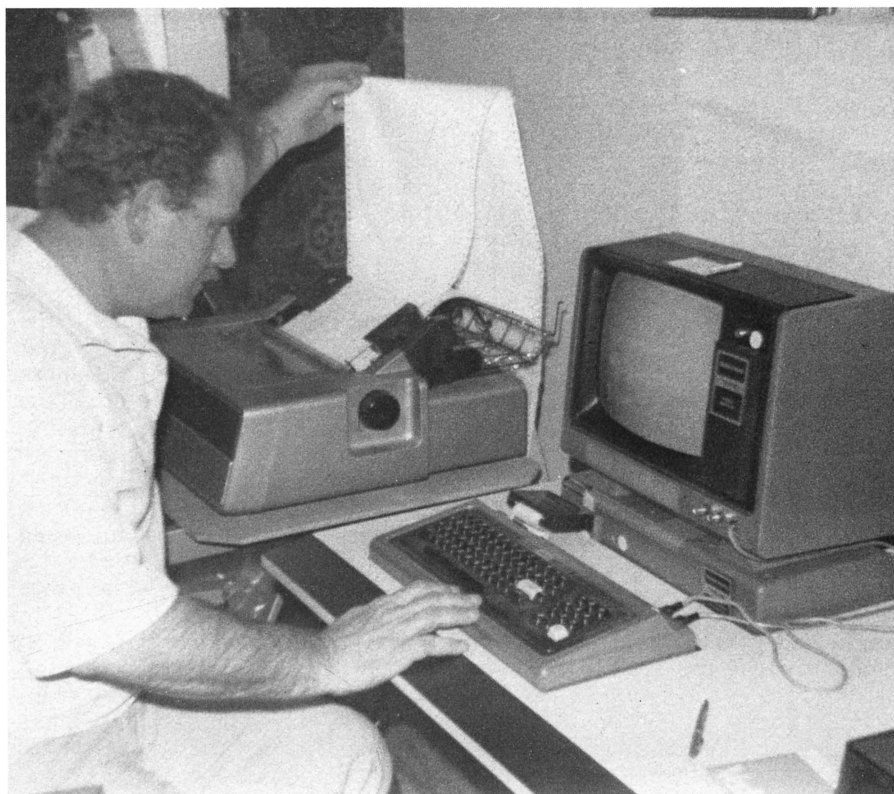
ADDRESS _____

CITY _____ STATE _____ ZIP _____

NOTE — Please make sure you print your name legibly on the return address portion of the survey card.

Becoming very affordable Buying a computer

By David Pierson



Fred Lange, an Oregon operator, checks out the printout on his TRS-80 computer.

With the price of computers continually coming down, and operators becoming accustomed to solid state technology, and economic conditions making it necessary to keep even closer tabs on business operations — more and more operators are considering purchasing their own computer equipment.

It's a trend that speaks not only for the times we live in but also for the new breed of professional operators who have become acutely aware they need all the decision support data they can muster.

In prior times, operators could make decisions from "the seat of their pants," that is, basing much on their instincts and feel for the industry. But with inflation rampant and the cost of money astronomical, operators have found it's not safe anymore to base business judgments strictly on "instinct" and "feel." Instead, they have sought to compile decision support data to eliminate a lot of the guesswork.

Thus, we see compilations of revenue, return on investment, depreciation, repair costs, by machine and by location; earnings comparisons between equipment types (arcade pieces, pins, jukeboxes, pool tables, etc.); and a glut of other statistical information.

With even 100 machines out on location, the statistics get to be rather formidable for even the most efficient manual record keeping systems, and

that is why operators, after they've passed over the century mark in the total number of amusement pieces, start wondering if there's a better way to keep track of it all.

It's at that point an operator's thoughts turn to putting the whole thing on computer.

At a cost of around \$5,000 for the equipment alone (usually including a central processing unit, a printer, a CRT screen, and a disk drive unit which handles the computer's memory and programs), an operator with anywhere between 100 and 500 machines should be able to manipulate data efficiently to get the decision support he needs.

The optimum number of machines for computer equipment in this price range seems to be around 350 games, although operations with up to 500 games could probably use such a system efficiently.

Computer brands in this price range appear to include products from Texas Instruments, Durango, Commodore, and Exidy with apparently the two most popular units in this category being Radio Shack's TRS-80, Level Two, and the Apple II computer. Cost, of course, varies depending upon what the operator chooses.

For larger operations, computer hardware in the \$10,000 range might suffice with equipment from companies such as IBM, Digital Equipment Corp., and Quantel probably included in this price range.

(In all cases, the operator in the market for a computer should shop around—relying heavily on the “Yellow Pages.”)

Operators in the market for their own equipment should keep in mind, however, that the cost of the equipment does not include the cost of programming the computer to give you the information you want. For a ballpark figure for operators, programming the computer will just about double the cost of going on computer.

But is the investment really worth it?

This month's Coinman, Charles C. Ross, thinks it is. He says a computer that is programmed properly can provide the operator with information he didn't even know he should be getting. “An operator who is operating 150 to 200 machines,” maintains Ross, “can probably make the system pay for itself.”

Fred Lange of Action Amusement, Inc. in Klamath Falls, Oregon, found that in addition to using the computer for payroll and general ledger, the computer became for him “a valuable tool in dealing with my customers and inflation.”

He said he can keep track of when he changes, adds, and services his equipment in each location and, by running a graph of any location's revenue, can monitor each location's collections, printing out the location's take and his own.

If collections begin to drop, he told PLAY METER, and he finds he has kept the equipment current and serviced, he can then approach the location owner and ask what changes the location could have made which could have adversely affected collections.

It's really a novel twist and can actually help an operator turn the tables on demanding locations. Also, it helps the operator maintain his professionalism since he has the printed data there to support him.

Has this approach hurt Lange? Hardly. He's working on a 60-40 split with his locations, with the locations getting the 40.

One of the main reasons for owning a computer as opposed to time sharing seems to be that the operator can then tailor the computer to do for him exactly what he wants done. With time-sharing, an operator will find himself locked into a canned program that probably doesn't satisfy his needs completely—although at least one time-sharing firm, Dabco Service Company of Los Angeles, has been showing signs of tailoring its programs specifically for the operators' needs, incorporating such features as revenue and ROI by

machines, etc.

But, as Lange puts it, a great advantage in owning your own computer is that “you can ding around with it, whereas you pay for all the time you're using the computer when you time share.” By “ding around” with your own computer, Lange seems to suggest, you can set it up to do exactly what you want it to do for you.

And this leads into one of the biggest problems with owning your own computer equipment. Because of the highly specialized nature of the coin-operated amusement industry, there are no pre-packaged software programs available—though this criticism may be unwarranted since it seems to defeat the whole purpose of letting the operator hand-tailor his computer to give him what he wants and only what he wants.

But for those not interested in “ding around” with computers, it seems there have been developments in this regard by operators who have blazed the way as far as going on computer. It appears those operators on computer are willing to sell their own software programming systems to other operators at a cost much less than what an operator can expect to get his computer programmed for.

Two operators we spoke to made such offers: Fred Lange (of Action Amusement, Inc., 2006 Oregon Avenue, Klamath Falls, Oregon 97601) and Charles C. Ross (of Innovative Management Consultants, 300 North LBJ Drive, San Marcos, Texas). The advantage would be mutual, they pointed out, with the operator purchasing their ready-made programs, acquiring software designed specifically for operators but at costs far below what it would cost the operator to program his computer from scratch.

Now, although the cost of the equipment has come down considerably in recent years, many operators still seem somewhat hesitant to buy because of the continual improvements and modifications associated with the computer revolution.

Why buy now, the figure, if there might be something better coming along in six months. But operators who are led into inactivity for this reasoning should also be considering two other facts: (1) the cost of going on computer today is very reasonable and (2) an operator's hesitancy in going on computer simply because something better might pop along does not take into account that such an operator is still left without the advantages of a computer and is probably losing untold dollars because of not switching over, since he has already seen an advantage, in his

case, of going on computer.

Another possible hindrance might be in the area of service. There appear to be mixed reactions from industry people about the service backup they receive on the computer equipment they were sold. Some extremely laudatory, and others claim the company they deal with is not as committed to service as it pretends to be. So, for the operator considering the purchase of computer equipment, it would probably be wise to investigate what other owners of the equipment in the same area have to say about the service.

With respect to the hesitations and drawbacks associated with owning a computer, it appears the applications for a computer in the coin-op amusement industry are endless. Inventory control programs, revenue reports, depreciation assessments, repair costs, per-machine and per-location reports could only help modernize the professional games expert's operation and help him make the right decisions because he has all the pertinent facts at his fingertips.

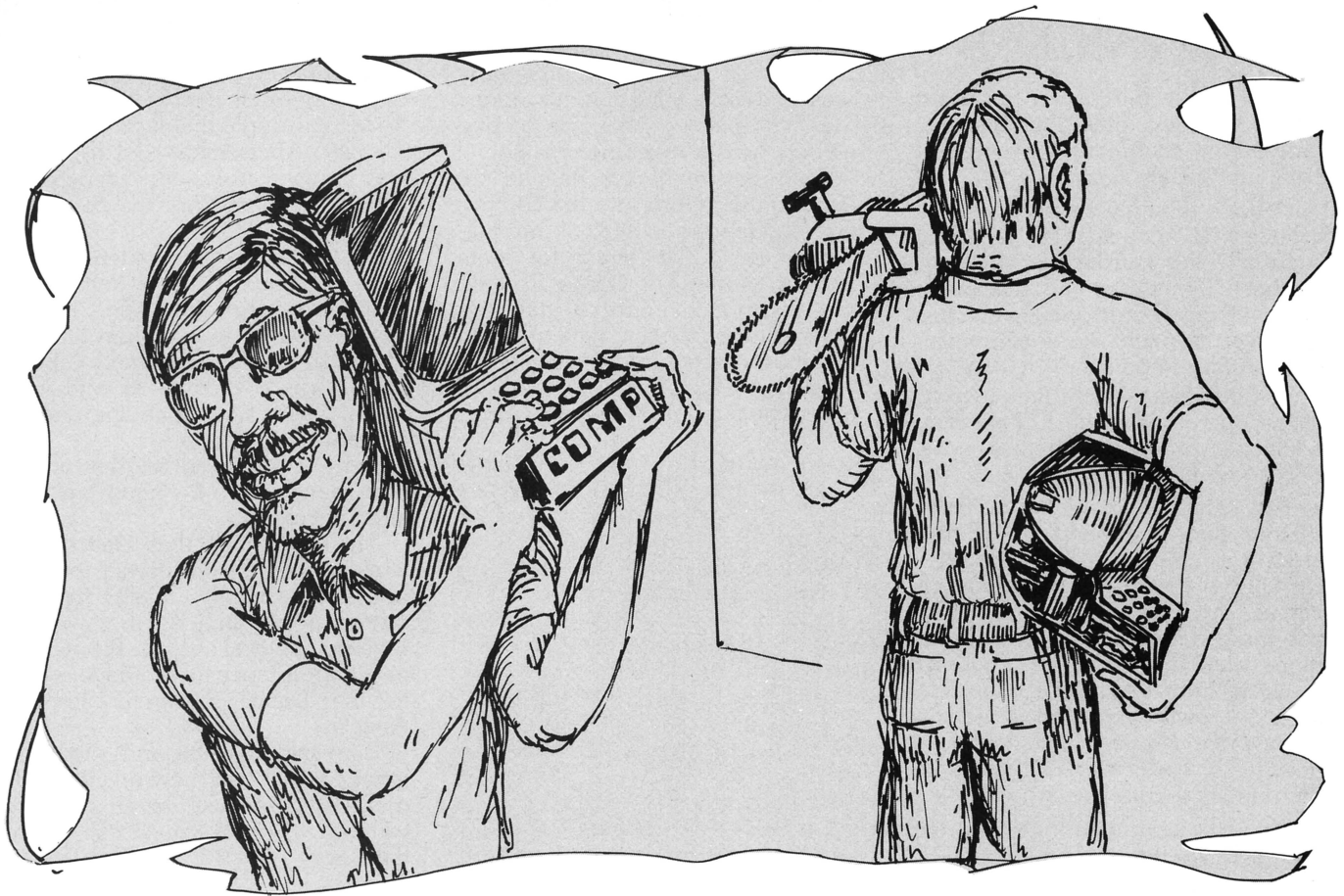
Also, it appears to simplify such headaches as payroll (with a computer that will not only write the checks, but figure deductions, give quarterly earnings reports, and write W-2 forms). One operator claims he saves \$50 a month on the payroll alone. One suggestion along those lines—a tractor-line printer would probably be better because it holds the paper straight for writing checks.

Going on computer can also simplify the matter of license applications in many areas where operators need to keep abreast of such things as serial numbers, locations, etc. And, of course, there are the countless applications it can provide in the analysis of the operator's equipment according to revenue, depreciation, etc., by machine, by location, and by machine type, and even machine model.

Finally, the operator who is considering going on computer should remember that a computer is not a magic worker, it is merely a tool—a very efficient tool that can help him make the right decisions.

It won't provide the operator with information or knowledge that is forbidden or otherwise unobtainable. It will not give the operator any information that he could not have gotten on his own with a sharpened pencil and a few sheets of paper.

The difference is that a computer, properly programmed, can provide the operator with more of that same information faster and store it in a lot less space than what an operator can hope to achieve with a manual system.



This illustration by Mars Walker shows the wrong way to share a computer.

The alternative to ownership

Sharing computer time

By Ray E. Tilley

The computer: electronic brain: child of UNIVAC. A fine thing. Marvel of the space age....But where does the coin go in; where does it come out?

That is what the computer tells you: where the coins are coming out.

"But I'm not into data processing, I'm in coin operated amusements..."

The hesitancy of an operator to connect to computer is understandable. "This is the type of machine the IRS and the CIA keeps tabs with," he may say. "It's Big Brother. It's just not me."

Time sharing. That is what this is all about.

Your time is valuable. Your technician's is valuable, your doctor's, your secretary's...and so is the computer's—but it can be affordable.

The arguments for owning your

own computer are presented elsewhere in this issue. Here, we present alternatives to that ownership—and the size of investment that comes with it—through the computer time-sharing methods that are available and those that are evolving.

The cost, you may want to know first. David Bern, president of Dabco Computer Services Inc. of Los Angeles says the maximum runs to \$3,000 or \$4,000 monthly—for the rather large operations, with some 10,000 game pieces. (The more units if games the operator has, the lower the per-unit cost of time-shared computer tracking, but a scaled-down total cost can be expected by someone with 300 to 1,000 coin-op machines.)

Bern states "the problem of coin operators:" Coin-op, he notes, is "big business, a cash business. Most operators are afraid to know how

much cash they have." But his service, COMPAS (Coin Operated Profitability Accounting System) "is not a profit/loss evaluation." The purpose here is location analysis.

The "problem" of operators, Bern elaborates, is that they "need discipline." Once an operator has more than 300 machines, human memory begins to fail—Did Sky Hook go into Joe's bar at Christmas or Thanksgiving; do the profits per month divide by seven or by eight?

"The computer is stupid—it doesn't forget anything," says Bern. This paradox-sounding fact actually is what forces the discipline of tracking every game bought and placed on location.

What the COMPAS system or a similar computer-tracked method tells are facts important to a profitable location: the amount owed on each machine, income on each piece,

location split on each, and rotation needed.

"The whole purpose is to help a business grow, and the business grows from the minute it goes on computer," Bern boasts.

Dabco's monthly service package includes 2 hours of "technical support"—this can include program changes. Otherwise, the support is for "helping them operate better, whatever it might be"—computer-connected, of course.

The provided service time is used at the operator's option. Otherwise, additional programming time costs \$35 an hour.

The chief advantage of a time-sharing system appears to be the ability of changing the computer capacity as the operator adds more games, more locations. As he then has more data, it is more vital and more valuable to him. The programs available from Dabco are adaptable to such growth which will hopefully come about. No new capital outlay is needed for hardware. The speed of the printers themselves are variable.

"We will work with them and tell them, 'This is the computer configuration you need'," said Bern. Dabco retains the staff to maintain the software, making the necessary program changes to meet operators' needs.

Back to the cost. The "max" includes the computer terminal on the operator's premises, telephone tolls, and other fees. But a lesser package than the \$3,000-\$4,000 monthly is possible, depending on what reports are wanted from the computer.

Michael Mendelsohn, Los Angeles operator of Games Unlimited, spoke with PLAY METER on his experience on the COMPAS system. "It gives you a better handle on where you're making and losing money," he said. "This system does a lot of things we were doing by hand. It's a positive influence on making a decision on game rotation to one place or another, or whether to buy a game.

"It's nice to see an overall picture once a month," stated Mendelsohn.

He noted some minus points also. "Occasional problems with the computer breaking down are normal—like a game machine breaks down." Also, smaller and less expensive computer systems can be bought, "and all alternatives should be considered," said the operator. He will himself look into buying a computer as the growth of his operation warrants it, Mendelsohn indicated.

But he had been happy with the shared-time system since he went on

its lines 18 months previously. Calculating done by hand previously "was time consuming and drudgery." The computer data processing method "was a welcome change."

Keen personnel are needed for plugging the reports into the computer, Mendelsohn noted, if no full-times are to be hired for data handling alone. For Games Unlimited, 2 to 2½ hours a day are required for processing data from the operation's games into the electronic memory.

At Theater Amusements Corp.,

For the renters of time from Dabco's computer, here is a summary of what goes in and comes out:

The operator enters the following into his computer terminal:

Rotations—tell where equipment is, where it has been, when it went in/out, and collections.

Collections—after the location totals are entered, COMPAS checks the route person's report, allocates location refunds, and computes percentage splits for accuracy.

Expenses—all business expenses are entered on the terminal so a true profit and loss can be performed.

Machines—new purchases and sales are entered to track inventory while tracking income.

In turn, you may produce on demand 24 hours a day at your computer terminal:

Account reports—to let your clients know collections.

Profit and loss by location and machine type, to evaluate profit.

Trend analysis—by location to evaluate those machines that are ripe for rotation.

Collection reports—by locations and machines to display income.

And numerous *inquiry functions* so that the operator can produce only those reports needed, when needed.

Dabco Computer Services Inc. is located at 11520 San Vicente Blvd., Suite 102, Los Angeles 90049; telephone: 213/820-4978.

also in Los Angeles, its computer operator spoke with PLAY METER on that firm's experience with COMPAS. Roland Pohl noted that the chain has some 500 theater locations across the country, with an average of two machines per lobby location.

"It's a great help as far as rotating, average intake, which locations give a better return and which are not," said Pohl. Reports from the locations are fed into computer weekly.

In Theater Amusement's case, the amount of data led the firm to hire

the computer operator full-time.

Another cost to be considered is that of printout paper, estimated at \$42 for a supply that lasts a week at Theater Amusement. (The paper was bought from an independent supply company, not the computer firm.)

From the widely scattered locations of Theater Amusements, all collections are compiled in an easy-to-read form in a short time.

The sometime problem of "phone noise" was overcome in mid-April with a leased telephone line directly to Dabco's computer.

Bern of Dabco admits that phone lines have been a "hang up" for another reason.

The hitch was that Dabco was currently serving California location operators, mainly. Calls from a distant point such as in Arkansas require that local coin-op business to pay long-distance tolls to have access to the Dabco computer in Los Angeles.

Bern said he wants and is working toward a national network that will make it economical for an operator without a WATS line to call in the data from his local terminal to Los Angeles and COMPAS at local call rates rather than long-distance tolls. That planned hookup through "Tele-net" (G. T. E.) may come about in July or August, Bern said. Dabco is awaiting only the installation of special leased telephone lines in Los Angeles for this service to run to more than 200 North American cities, said Bern. Even the "most remote" locations can then have access to the computer's shared time, he said.

A "new marketing approach" being taken by Dabco in California is the *leasing* of hardware from Digital Equipment Corporation to operators. This provides for monthly payment of a reportedly lesser capital investment than a \$60,000 buying price for a wholly owned computer.

In effect, a loan is arranged with a lending institution. There is no down payment, and the bank leases the hardware to the operator, Bern explained. At the end of a given period of time, if the operator does not want to continue his outlay for his own computer, the computer is "sent back to the bank."

A word to the wise is sufficient: costs have risen above the \$2,500 monthly leasing price of last year.

However, the operator is given several advantages through leasing, including a provision to hook into Dabco's master computer until the leased hardware arrives.

Those are the choices for business data processing. And they still don't include a computer with a coin slot...

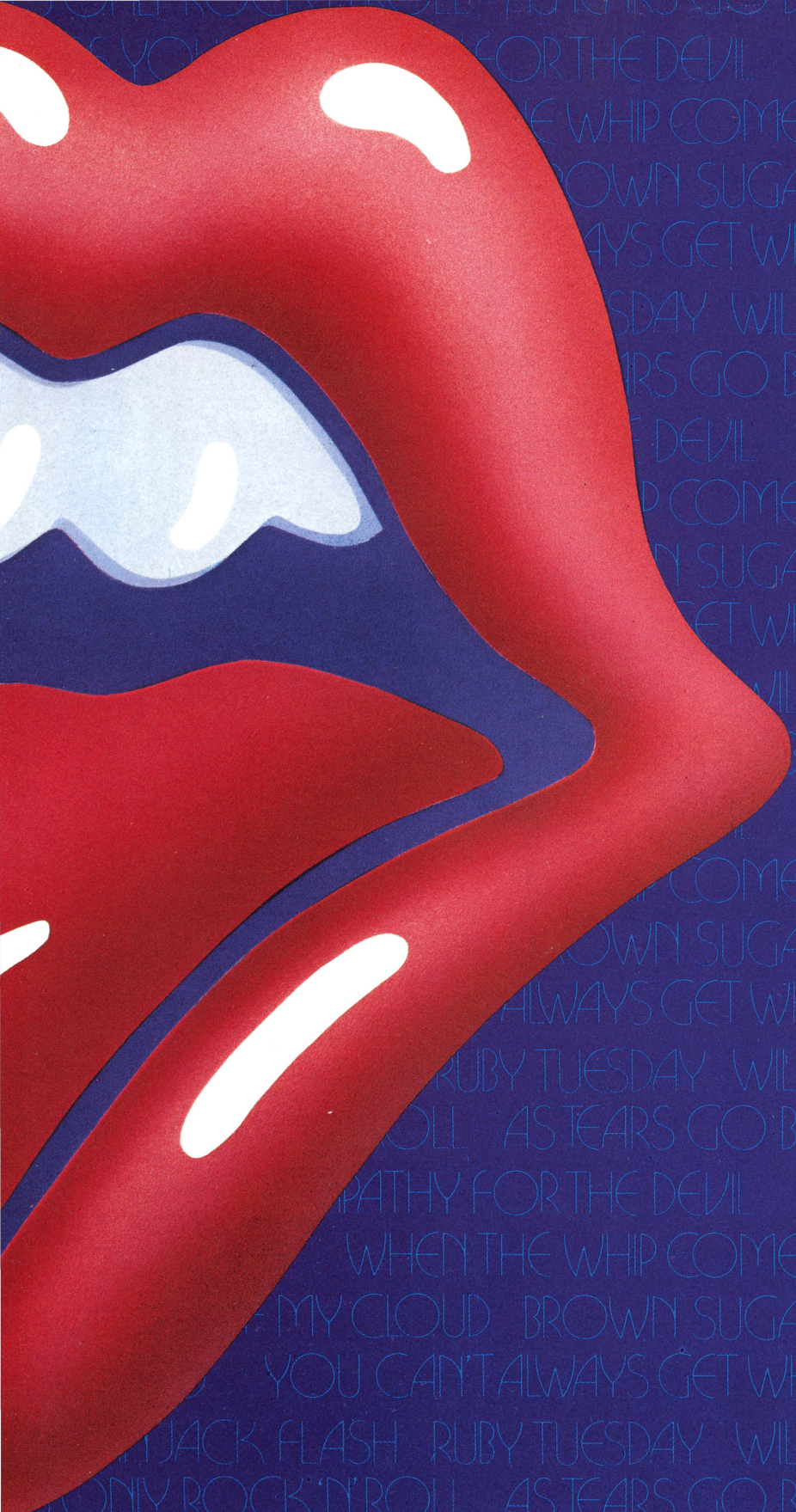
LADIES & GENTLEMEN
THE ROLLING STONES



ROLLING  STONES™

ROCK & ROLL YOUR WAY TO PROFIT WITH ROLLING STONES NEW HIT FEATURES

A Bally Rolling Stones pinball machine is the central focus. The machine has a large, rectangular screen at the top displaying a graphic of the Rolling Stones band members. Below the screen, the playfield is visible, featuring various targets, bumpers, and a central figure. The machine's cabinet is decorated with the Rolling Stones logo and the band's name in large, stylized letters. The machine is supported by four black legs. The background is a large, stylized red and white circular graphic, resembling a vinyl record or a large 'S' shape. The overall theme is rock and roll, as indicated by the text and the band's branding.



GOING OFFSTAGE IN THE SIDE HOOPS CAN HAVE BIG BENEFITS

On either side of the playfield are hoops with rollover buttons that score the lit value and advance the bonus and the lit value up to 10,000 points and 5 bonus advances, including a special. These can be tied together or operate independently. And for the 1st time ever, there is a mini-post in each hoop that scores 50 points!

DROP TARGETS FEATURE WITH MEMORY CLIMBS TO THE TOP OF THE PLAY LIST

Another unique new hit feature from Bally is the 4 memory drop targets with increasing point values that score the lit value at the time the last target is dropped. From 5,000 to 25,000 points and special are possible. In addition, each individual drop scores 500 points.

MUSIC-MUSIC-MUSIC

Rolling Stones' hits, SATISFACTION, JUMPIN' JACK FLASH, MISS YOU and WHEN THE WHIP COMES DOWN, echo throughout the games' play. Bally's other great new sounds combine with an exciting background sound that increases its intensity with the play of the game to further attract players.

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Knocking down the Satisfaction Target scores 3 bonus advances and exposes the saucer which scores the value of the current bonus. The second saucer entry scores the bonus plus an extra ball, which can be adjusted for memory.

RECORD BIG BONUS POINTS WITH 5 TARGETS

Completing the 1 to 5 target sequence lights the way to big bonus points. The 1st completion lights the 20,000 light; 2nd the 40,000 light; 3rd the 60,000 light and the 4th special. These are adjustable for memory.

R-O-C-K PRODUCES MULTIPLIER HITS

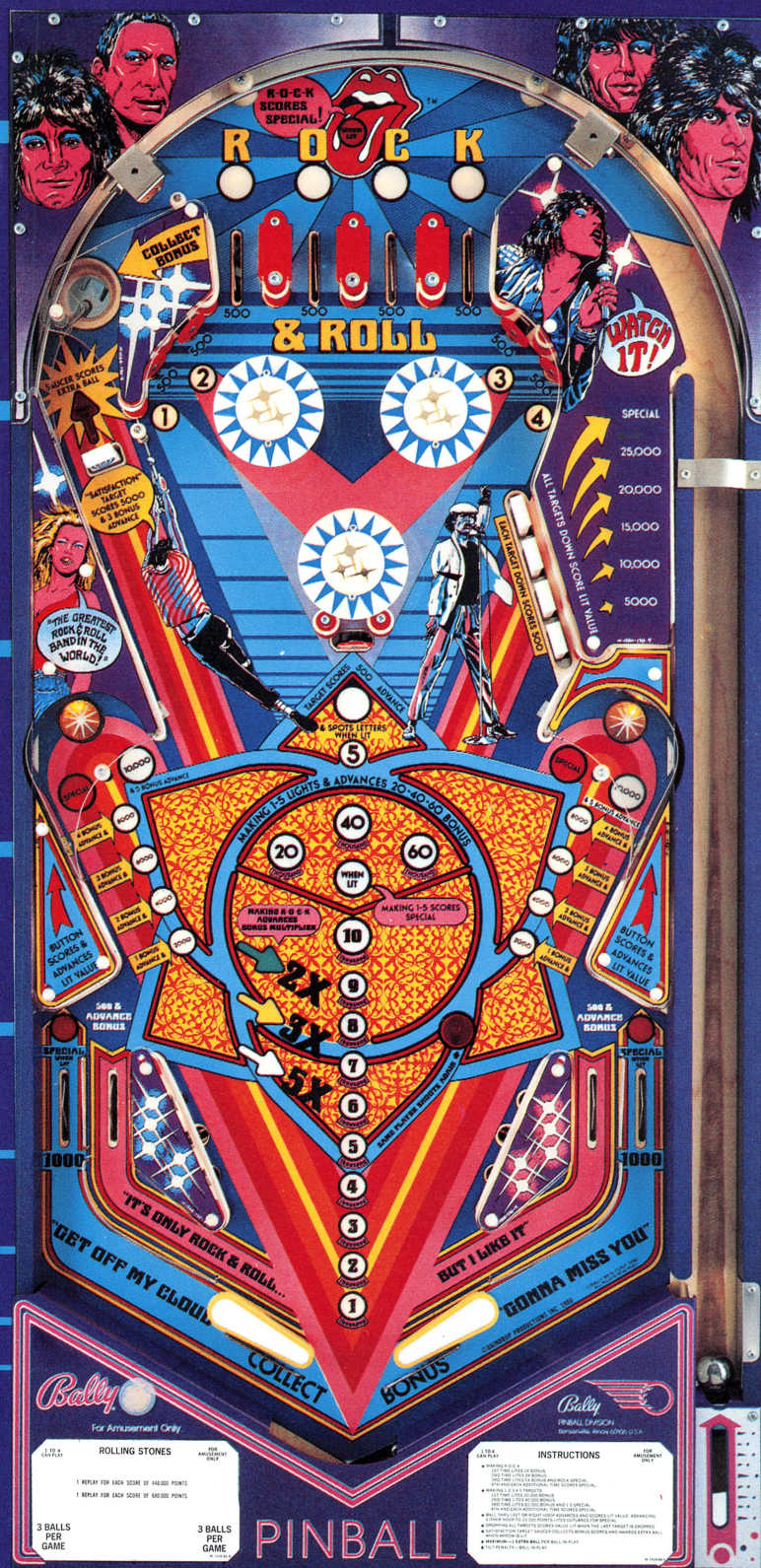
Each completion of the R-O-C-K lanes advances the bonus multiplier from 2x to 3x to 5x and special.

Front Door Programming

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The operation of these games and the features therein may be subject to various state and local laws or regulations. It is not intended herein to solicit the sale of such games in any jurisdiction wherein the same may not be lawfully sold or operated.

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Arcade: 1990

Computer is key to the operation

By J.W. Sedlak

"Start the computer!" This is the first daily instruction in opening your arcade in 1990. And, as we will see, your entire business operations will depend on the reliability of that box in the back room.

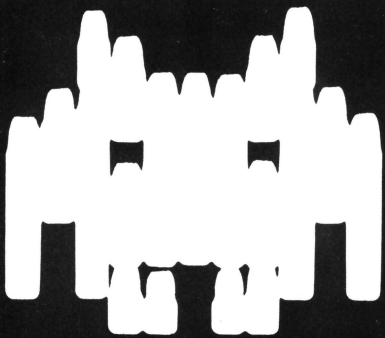
We've all seen how the arcade business has changed over the last decade: our initial reluctance to install those early TV ping-pong and tennis games; and, then, our sheer delight when the large coin boxes overflowed with quarters! What about those solid-state pinball machines? Certainly, if you had been told ten years ago that your pinball mechanics would have to know about transistors and electronic circuitry, you wouldn't have believed it. Yet, it's all here today. And we're not only putting up with it, but our business has been re-vitalized and we have, once more, captured the public's imagination.

Now let's look forward to the next ten years. We will use our crystal ball to look at the set-up and daily operation of a typical arcade in the year 1990....

† † †
It's Monday morning and you are opening your arcade for the new week's business. After starting up the computer, you decide the next step is to install the new video game you purchased over the weekend. This game, called "MARS WALK", is supposed to be a big money-maker. It is tied-in with the recent manned landing on Mars. With a price tag of \$5,895, it had better be good! The game arrived at your shop Saturday in a carton that measured 24 in. x 6 in. x 6 in..

You open the box, take out the decals and computer tape, and decide which of your games you will replace. Your computer analysis has identified the "HOVERCRAFT" driving game as the lowest profit generator of all your TV games. So, you remove all the decals and control





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mechanisms from that game and install the new equipment you just received.

Changing games in 1990 is just that easy. You buy the basic "box" (TV tube, power wiring, coin slots, credit card reader, and standard computer interface) for about \$500. Then you buy individual game kits to decorate the box and program your computer.

You see, all TV games are run from the central computer. There is no internal logic in the video games themselves. It wasn't until 1987 that computers fast enough to operate fifteen video games at the same time were available at a reasonable cost. But since then, the cost of these fast computers has steadily dropped and the computer-operated TV games have taken over the arcade.

The TV games are not the only things hooked to that computer. Look at that bank of fifteen solid-state pinball machines lined up on the far wall. You can't imagine how the poor game-operators of the early 1980s ever fixed those pinballs without the computer. When you buy a pinball these days, you also receive a specialized diagnostic tape which you use with your computer.

When a problem arises, you load the tape and the computer will analyze your game and tell you exactly what is wrong. You simply have to replace the part the computer tells you to replace. And, if you don't have the right part, 80 percent of the time the computer will figure a way to keep the game operating until you can get the needed part. It is very rare that a pinball is ever out of operation for more than 30 minutes.

Keeping games running is necessary so that the teenagers will keep dropping those quarters in the slot...right? Well, not exactly. Oh, your main customers are still teenagers, but very few people actually use coins anymore.

Although each of your games does have a coin slot, they also have a magnetic card reader—similar to those automatic teller machines introduced by banks in the late 1970s.

Your customer inserts his credit card into the game. The card reader reads the magnetic strip and sends the information to your computer. The computer keeps track of all the games played on that card and gives a total at the end of the day. The computer then creates a tape with

the charges of the day and you "deposit" this tape in your bank. The bank computer reads the tape, credits your account, and bills the credit card companies. It's all easy and there is no counting or rolling of coins! And there is no worry about a robbery—the computer tape is useless to anyone else.

To increase your business, you've worked out a deal with the hotel across the street. When guests check-in at the hotel they are issued specially coded cards which open their rooms (instead of the old fashioned keys). The guests can use those same cards to play your games. At the end of the night, you drop off the computer tape at the hotel and they put the charge for the games on the guests' room bills. At the end of each week, you get a nice check from the hotel.

These magnetic card readers are installed on all of your equipment—videos, pinballs, and the juke box. And what a juke box it is! It covers a large portion of one wall and measures 8 feet wide, 8 feet high, and 4 inches thick. It produces a sound unheard-of in the early 80's.

Of course, back then, operators still put records in their juke boxes. What a drag that must have been. Today, everything operates by using the Computer Voice Synthesizer. As new singers (individuals or groups) become well known, you can purchase a tape of their voice characteristics for a one-time charge of \$1,000. In addition to this, you purchase monthly the words and music to all of the most popular songs. All this information is loaded into your computer.

When the teenagers play the juke box, they must select two things—the song and the artist. *Your equipment is capable of having any artist sing any song!* And the voice reproduction is so fantastic, that it sounds like a high quality recording. Your clients pump a great deal of money into the juke box to hear their favorite artists sing *all* the hit songs. What makes it great is that the artists and studios have kept the price of the voice tapes high enough that they are not generally available to individuals. This means that your arcade is the only place in town where teenagers can get this musical fantasy.

But even all this activity is nothing compared with what happens every night when you turn on the video portion of the juke box. The video screen is a whopping 6 feet by 6 feet.

The same high technology that runs the sound system is capable of producing life-size, performing, three-dimensional figures that look so real you want to ask for their autograph. You feature a different individual or group every night and charge an admission for the 90 minute show. You are almost sold-out every night and on week-ends you literally have to turn them away.

During these shows and at other times when you're open, all the lighting is also controlled by the computer. No matter when they come in, your customers are treated to a light show that is synchronized with the songs playing on the juke box.

Light shows, TV games, credit card processing, pinball repair, simulated recordings, and preparing the bank deposit are all things the computer will do for your arcade in 1990. Of course, the use of the computer will not be limited to these applications. You will still use it to perform all of the business bookkeeping and analysis of operations that you use it for today (see the other articles on business computers in this issue of PLAY METER). And since the sixteenth amendment to the Constitution of the U. S. was repealed in 1988, you no longer have to worry about using the computer to file income tax returns—there's no more I. R. S. (how's that for dreaming)!

The arcade of 1990 will be a dream come true for all the science fiction fans of 1980. The computer will undoubtedly be the most important single piece of equipment. We have to start now to prepare for that day. Computers are very dumb pieces of equipment. They will only do what they are told to do. We must start to learn exactly what we want them to do and how to tell them to do it, or we could be faced with a disaster on the day when the computer goes haywire and all the games start failing.

For, as important as the computer will be in 1990, people will still be more important. It's people who will be your customers, people who will operate the store, and people who will program the computer.

After all, someone must be there to fix things when "MARS WALK" stops working because a \$%#?&#%!/ teenager has jammed a bent credit card into that magnetic card reader!

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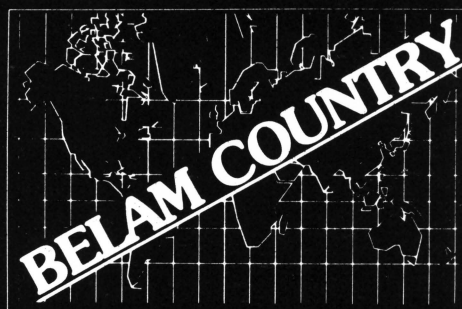
The sale or operation of these slots may be restricted by state and/or local laws or regulations. This is no way intended to solicit the sale or operation of these games where such is unlawful.

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MESSAGE AT DENVER HUDDLE:

Discos may be reborn as cocktail game rooms

By RALPH C. LALLY II

Continental Divide Distributing, Inc. of Denver, Colorado hosted a new product presentation at Denver's posh Green Gables Country Club. The event, which took place April 12, attracted 130 operators from Colorado, Wyoming, and Nebraska.

The highlight of the event was a lavish dinner during which various speakers addressed the group.

A complete display of newly released equipment was on hand for operators to evaluate for the first time. Heading the list of new games were Midway's *Galaxians*, Williams' *Firepower*, Gremlin's *Mini Monaco GP* and *Astro Fighter*, Stern's *Ali* and *Big Game*, and Universal's *Cosmic Alien*.

Several manufacturing representatives were on hand to participate in the festivities. Among them were Jack Gordon of Gremlin, Nancy Goodwin of Williams Electronics, and Bert Davidson of Lowen-America.

During the dinner ceremonies, Davidson addressed the audience and introduced the new line of NSM phonographs. Following his remarks, NSM's field service engineer Russ Strahan and Continental Divide's service manager Scott Tompkins explained the various technical advantages and conveniences of the new NSM phono.

The distinguished industry veteran Jack Gordon then gave a short talk regarding new opportunities involving sitdown video games. Gordon predicted the "day of cocktail tables is here."

In the next thirty to sixty days, Gordon said, Gremlin will be offering a plan to operators whereby they can approach dying "disco" locations and transform them into adult game rooms consisting of some 25 to 50 cocktail table games of various types. During his remarks, Gordon cited examples where such programs were meeting with success all over Japan and Hawaii.

Continental Divide executives Jerry Gordon and Frank Negri shared the master of ceremonies

responsibilities throughout the meeting. They expressed their gratitude and appreciation for the business they received over the past year from

their loyal customers. The remainder of the evening was spent discussing new equipment on display and casual conversation over cocktails.



Jack Gordon of Gremlin (left photo) and Frank Negri of Continental Divide spoke at the gala dinner.



Machines line the banquet hall for Continental Divide's guests.

DRA polls distribs, operators

Distributors Research Associates announced that it has broadened its base of data with the Spring issue of the DRA Price Guide.

Results of polling ninety operator subscribers to the Price Guide and ten distributors, together representing a geographical cross-section of the United States, were shown for twenty games listed in the Spring issue of the quarterly price guide.

The respondents were asked the lowest price they would accept for each of the games in trade, as well as the highest price they would pay for the games if they were refurbished. The prices given came within \$20 to \$30 of the DRA guidelines for three games; the difference in the poll results and the DRA figures was \$50 for three games and \$65 for one other; and the difference in quotes for "lowest price" was \$5 to \$15 for five games. (Not counted here are three games listed for the first time in the Spring guide; the consensus from the poll represented the DRA price listed.)

A similar range of results were shown in the quotes for "high price for game if completely refurbished."

The publication noted that a test of its formula for determining values of equipment was sought by DRA in February, which marked the fifteenth anniversary of the Price Guide. "Prior to computing the figures for this issue, we decided to expand the extent of our fact-finding to a larger segment of the industry. We selected ninety long-time operator subscribers and ten distributors covering the entire country and asked them to participate in a poll. Forty-nine operators and six distributors responded (55 percent response)..."

In the letter sent with a poll form to the operators and distributors, the DRA explained that the guidelines desired for their quotes included: "The age and condition of the game...; has it been service-free or is it troublesome; does it have a history of high earnings, or is it a dog..."

And in commenting to PLAY METER, DRA Publisher Ozzie Truppan said: "We research the market thoroughly for three months and adapt, as nearly as possible, the same formula used by the National Automobile Dealers Association. The truth is, the market establishes itself. We don't price new equipment until six months after it has been released. By that time each unit has had some

seasoning, and guidelines as to its true worth begin to form. Prices are quoted and advertised. We analyze them, feed them into a computer and publish them."

Distributors Research Associates is

located at 6595 N. West Street, Suite 109B, Miami, Florida 33166. The Price Guide is available by writing DRA, and a discount is offered on its price with a subscription to PLAY METER.

Stern tags two handlers

Stern Electronics, Inc. has appointed full line distributors for the San Antonio and Memphis areas, officials of the Chicago manufacturer said.

Dennis Rhodes Enterprises of Memphis was appointed distributor, and that action is expected to boost sales in the Memphis area, according to Larry Siegel, Stern Electronics' vice president for sales.

For the San Antonio, Texas area, Southwest Vending Co. was named a full line distributor. This addition to Stern's network, "and the attendant expansion of service facilities in the southwest will be a real asset to the continued growth of Stern Elec-

tronics," said Siegel.

The two new Stern associations became effective with the recent release of *Big Game* and *Ali*, Stern's two newest pinball games.

President of Southwest Vending Co. is John Gatens; Jim McNeely is office manager. The company's headquarters mailing address is P.O. Box 18227, San Antonio 78218; telephone: 512/824-9223.

Dennis Rhodes Enterprises is owned and operated by Dennis Rhodes and is headquartered at 669 Madison Avenue, Memphis, Tennessee 38103; telephone: 901/529-1075.

Belam bows Nassau base

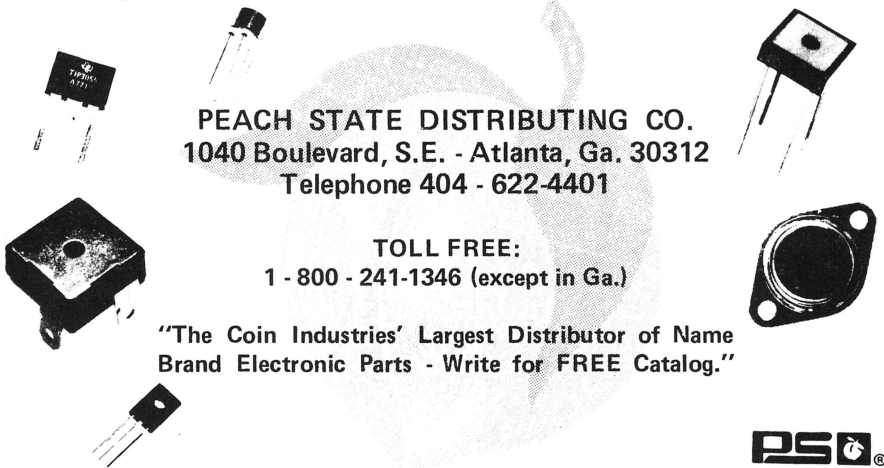
Belam executive Marc Haim recently announced the opening of a new office in Nassau, Bahamas for the international sale of foreign coin machines.

The new office, called Belam Bahamas Limited, is located at 2nd Floor, Nassau Shop Bldg., Bay Street, P.O. Box N-4826, Nassau, Bahamas, and will be the offshore base of Belam Export Corp.

"In order to better serve our customers in the distribution of

Japanese and other products, we have set up an offshore base for these operations," said Bob Haim, Belam vice president. The office was set to be fully operational in late April.

Belam is one of the largest international distributors of coin-operated machines, with its head office at 51 Madison Avenue, New York City. Other Belam offices are located in Miami, Florida; Belgium; Chile; and Argentina, in addition to the new Bahamas office.



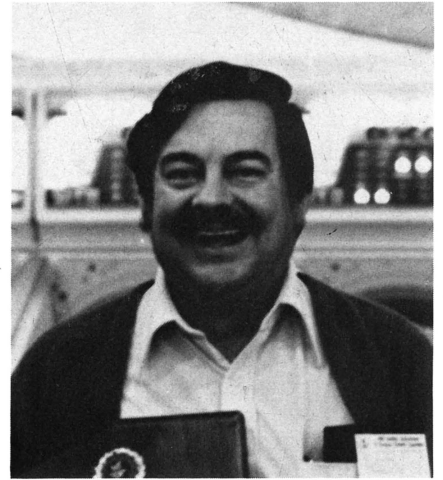
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Manufacturing



MEL McEWAN

Boom Ball company sold

By RAY. E. TILLEY

Mel J. McEwan has purchased the games division product line of Ramtek Corporation and formed Meltec, Inc. to market *Boom Ball* and other games to which Ramtek held rights, patents, and inventory.

The sale to McEwan was completed recently at an approximate \$250,000 sale price. McEwan will be president of Meltec, Inc., and Mrs. Albina McEwan will be secretary of the firm.

Mel McEwan told *PLAY METER* a video line expansion is projected for after about one year of marketing *Boom Ball*.

He has been with Ramtek since 1973 and has been its general manager of the Games Division for 2½ years.

Ramtek entered the amusement games field in 1972. A public company, it remains in the marketing of computer-oriented graphics display systems for which it was founded. Its applications are notable in the medical and industrial fields and its industrial technology continues to be developed.

Meltec, Inc. will be located at 290 Commercial Street, Sunnyvale, California 94086. The *Boom Ball* line is marketed mostly by direct sales to parks, arcades, and beachfront locations, said McEwan.

He noted that his own firm possesses rights to build "second generation" developments of Ramtek games.

The telephone number for Meltec is 408/738-4422.

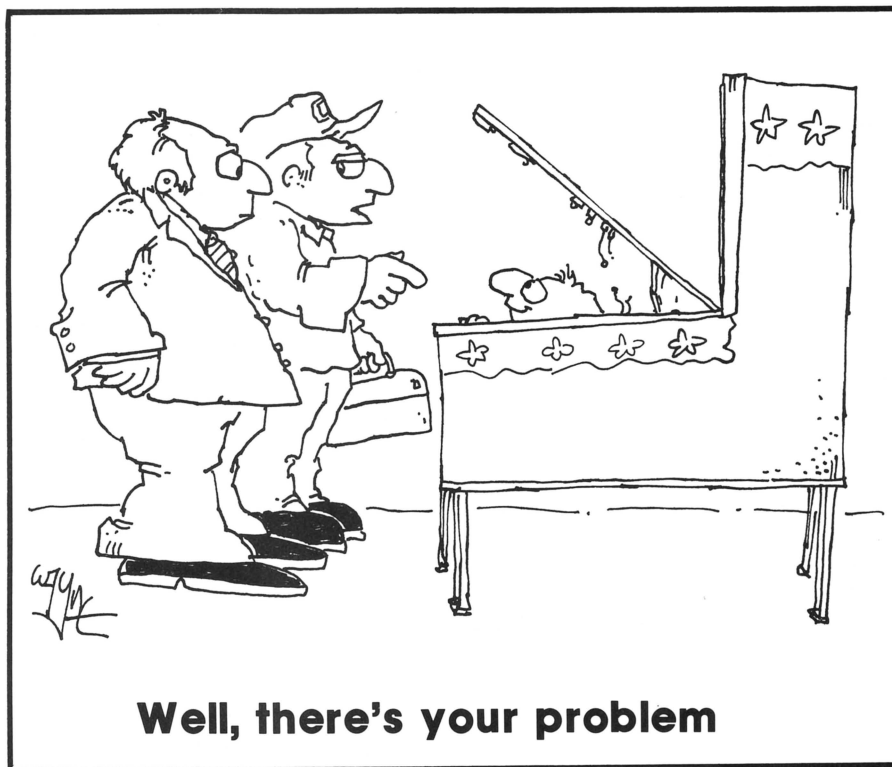


*The Radisson South in Bloomington, Minnesota was like a giant game room for the "Shoot Out" finals, completed in April. In these scenes from the Hanson Distributing-sponsored tripartite tournament, (top) floor space is reserved for pingame match players; part of the ballroom is roped-off for pool competitors (center); and (bottom) foosball playoffs are heatedly in progress in a separate area. See May 15 *PLAY METER* for more on "Shoot Out."*

New office for Standard

Standard Change-Makers, Inc. of Indianapolis, announced that as of April 1, 1980, in addition to their district sales office in Philadelphia, they have opened a new east coast service center to assist owners of Standard equipment in the proper maintenance of their machines.

The center, headed by District Manager John H. Dyal, will be located in the same building as the Philadelphia sales office at 415 Chester Pike, W., Ridley Park, Pennsylvania and will have the same telephone number, 215/521-9222. The new center will serve customers in the Mid-Atlantic and Eastern Seaboard states.



Emporium moves

Amusement Emporium has moved into new facilities, tripling its former floor space in Englewood, Colorado.

Steve Walko, speaking for the supply company, said a new "will call" department has been added for special deliveries. "Increased business led to the expansion," he said. Amusement Emporium has also added product lines and now handles Stern, Midway, and Game Plan parts, plus cigarette and candy machine parts, as well as Wildcat chemicals, and these are not listed in the firm's most recent catalog, he said.

A grand opening announcement will be made soon, said Walko.

The toll-free phone line for Amusement Emporium, located at 6880 S. Emporia Street, Englewood 80112 is: 1-800-525-7059.

Spider-Man chances

General Vending Sales Corporation of Baltimore announced a "first time happening" in giving chances for a free Gottlieb *Spider-Man* pingame in a training seminar meeting on April 10 in General's showroom.

With the purchase of each *Spider-Man* game, one free chance was given to win one free game. The offer was for "firm, non-cancellable orders" of the game. For those with orders already placed for *Spider-Man* those customers' names were automatically entered for the April 10 drawing.



Atari's Lunar Lander has become the first coin-operated video game to be placed on location at Kennedy Space Center's Visitor center, Cape Canaveral, Florida. Shown here, standing by the first of several Lunar Lander units to be located at the center, are Dick Needleman, Atari manager of leisure industry, and Harry Chambers (right), general manager of NASA Tours Division of TWA Services, Inc. The location of Lunar Lander games broke precedent when Kennedy Space Center officials allowed the coin-op game at the facility.

music programming



By Pat Matthews

Program/Music Director WQUE New Orleans

Wheat and chaff of the bumper R'n'R crop

Sometime last fall, music began to change. Disco burned itself out (with lots of help from "all-disco radio"). There was a New Wave on the horizon. And since then, this so-called new wave music has spawned a revival in rock'n'roll—a refreshing one at that.

BACK OF MY HAND (I'VE GOT YOUR NUMBER)—THE JAGS—Island IS 49202

From the same people who brought us The Buggles, it's straight-ahead rock'n'roll from over England way. It's a bouncy three-chorder with nice vocals employing a Sixties feel. If this record sells as a single, Elvis Costello's singles should all go gold. Six out of ten.

WHEN ARE YOU COMING HOME? — ORLEANS — MCA 41228

Since John Hall left, this group has had its rough sledding and the track doesn't appear to be getting any smoother. The song is a hodge-podge of the old Orleans sound and the latest things the Doobie Brothers

have been into. The only positive thing is that it's a happy song, full of optimism. Six out of ten—if lucky.

SHOULD'VE NEVER LET YOU GO — NEIL & DARA SEDAKA — Elektra E-46615-A

Despite the fact that I never knew Neil has a daughter, let alone a singing one, this is hit material. Neil Sedaka is the same as always, and this makes it a fun game trying to figure out *who's* singing at any one time. It's a tender love ballad that sounds strange when sung by a father-daughter team. Nonetheless, it's one of the more impressive duos in quite some time and I'm glad Neil sings it with his daughter instead of, say, Kenny Rogers. Seven out of ten at least.

RAISED ON YOU—HEART—Epic 9-50874

OK, so this is Nancy's song. Ann Wilson usually does the singing, but this time out it's sister Nancy in a very Fleetwood Mac-sounding tune from the *Bebe Le Strange* lp. A mid-tempo rocker, this cut showcases the excellent voice of its writer/singer.

Nice piano and guitar work make this one a possible. Try a seven out of ten and wish the girls luck.

COMING UP — PAUL McCARTNEY—Columbia 1-11263

That's right—Paul McCartney. No Wings, no Beatles, just James Paul embarking on his first solo effort since the *McCartney* album was released in 1970 amid speculation of an impending Beatles break-up. The new CBS lp (the first album was released on Apple label) is simply entitled *McCartney II*.

Well, that's all fine and dandy. The only problem is the single we're reviewing is not the version of the song that's getting all the airplay. There's an advanced pressing on a live Wings version of the same song that's taking radio by storm. And that's lucky for Paul. Because kazoo solos don't come anywhere near five-piece brass sections and Paul's voice speeded up on a vari-speed doesn't match the gutsiness of the live performance. Besides, he seems to be having a good time on the live recording and fooling himself on the studio version. Nine out of ten.

The records are rated as follows: 10 out of 10 = Top 10 peak; 9 out of 10 = Top 20 peak; 8 out of 10 = Top 30 peak; 7 out of 10 = Top 40 peak; 5 or 6 out of 10 = Somewhere in Top 100; 4 or less = Forget it, loser, break in half.

HERE COMES MY GIRL — TOM PETTY & THE HEARTBREAKERS
—Backstreet MCA-41227

Tom Petty just happened to be in the right place at the right time. He struggled for so long, then hit instantly this past fall with the surge in rock'n'roll popularity. This is the third single from the platinum *Damn The Torpedoes* album.

This is the cut I thought would be the follow-up to "Don't Do Me Like That" and has been the AOR (album-oriented radio) favorite. The early Birds influence is best exemplified in this gutsy Bruce Springsteen-ish lyric talk/sing anthem for guys with bad reputations. Nice guitar and piano backing. And, yes, Tom does say "hike" or "hey" just as the guitars begin to fade on this song, too! Should go at least eight out of ten.

GEE WHIZ — BERNADETTE PETERS — MCA 41210

No, Steve Martin is *not* singing background vocals. Bernadette shows she's got some soul in this remake of the old Carla Thomas hit of the mid-Sixties. The arrangement is almost exactly the same as the original, with simple piano chords, a male-female chorus backing and a searing Farfisa organ thrown in for good measure. The main thrust of this is that it *doesn't* really sound like Ms. Peters. A minus is that the sax solo is cut off after a half dozen notes. Seven out of ten, possibly higher.

I DON'T WANT TO WALK WITHOUT YOU — BARRY MANILOW
—Arista AS 0501

I know what you're thinking, but you're wrong. No, it's not "Can't Smile Without You" with different words. But it is the old tune your parents may have enjoyed by Betty Grable, Vivian Blaine, and a host of others during the Forties. It's a song, a classic, that has withstood the test of time, been freshened up and could very well be a hit again. It sort of makes you think of a happier time long ago when you hear it. Could go as high as seven out of ten.

HEADED FOR A FALL — FIRE-FALL — Atlantic 3657

The thing I like most about this group is that they pace themselves with releases and don't attempt to churn 'em out, if you know what I mean. That's what makes their music so good and awaited. This one is no exception. It's from their first lp in a year, *Undertow*, and is pure Firefall. The distinctive vocals, superb instrumentation and lyrics of imagery are once again the right combination for success. Should go Top Twenty—nine out of ten.

PLAY METER HOT STUFF

LOST IN LOVE—AIR SUPPLY—Arista
CALL ME—BLONDIE—Chrysalis ***
YOU MAY BE RIGHT—BILLY JOEL—Columbia ***
RIDE LIKE THE WIND—CHRISTOPHER CROSS — Warner Brothers ***
SEXY EYES—DR. HOOK—Capitol
DON'T FALL IN LOVE WITH A DREAMER—KENNY ROGERS & KIM CARNES—United Artists***
WITH YOU I'M BORN AGAIN—BILLY PRESTON & SYREETA—Motown
BIGGEST PART OF ME—AMBROSIA—Warner Brothers ***
PILOT OF THE AIRWAVES—CHARLIE DORE—Island ***
FIRE LAKE—BOB SEGAR—Capitol
DO RIGHT—PAUL DAVIS—Bang ***
THINK ABOUT ME—FLEETWOOD MAC—Warner Brothers ***
HURTS SO BAD—LINDA RONSTADT—Asylum
BRASS IN POCKET (I'M SPECIAL)—THE PRETENDERS—Sire***
HEART HOTELS—DAN FOGELBERG—Full Moon ***
ANYWAY YOU WANT IT—JOURNEY—Columbia ***
BREAKDOWN DEAD AHEAD—BOZ SCAGGS—Columbia ***
CARS—GARY NUMAN—ATCO
I CAN'T HELP IT—ANDY GIBBS & OLIVIA NEWTON-JOHN — RSO
FUNKY TOWN—LIPPS, INC.—Casablanca
THE ROSE—BETTE MIDLER—Atlantic
I CAN'T TELL YOU WHY—THE EAGLES—Asylum ***
STOMP—THE BROTHERS JOHNSON — A&M
SHE'S OUT OF MY LIFE—MICHAEL JACKSON — A&M
STEAL AWAY—ROBBIE DUPREE—Elektra ***
HOLD ONTO MY LOVE—JIMMY RUFFIN — RSO ***

PLAY METER PICKIN' & GRINNIN'

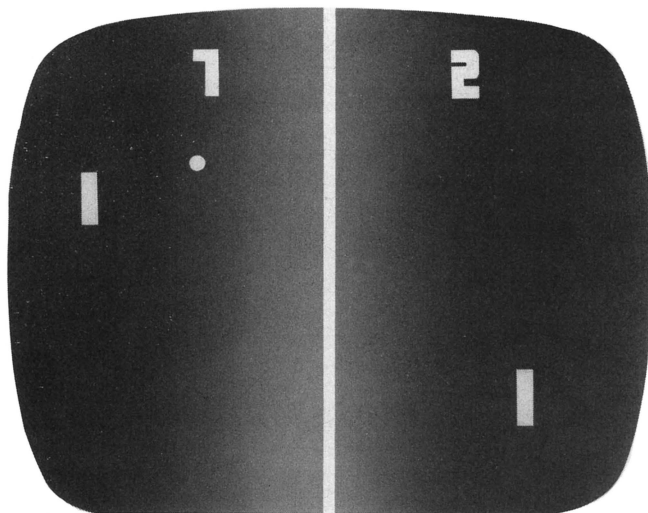
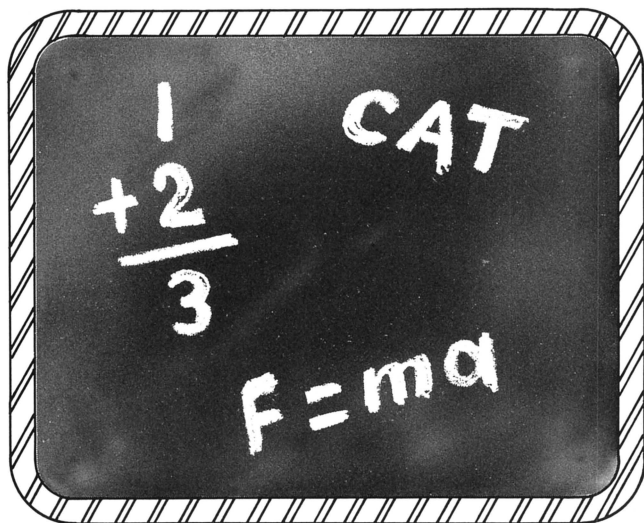
A LESSON IN LEAVIN'—DOTTIE WEST—United Artists
TWO STORY HOUSE—GEORGE JONES & TAMMY WYNETTE—Epic
IT'S LIKE WE NEVER SAID GOODBYE—CRYSTAL GAYLE—Columbia ***
GONE TOO FAR—EDDIE RABBITT—Elektra
THE WAY I AM—MERLE HAGGARD—MCA
MORNING COMES TOO EARLY—JIM ED BROWN & HELEN CORNELIUS—RCA
TAKING SOMEBODY WITH ME WHEN I FALL—LARRY GATLIN—Columbia ***
STARTING OVER AGAIN—DOLLY PARTEN—RCA
LET'S GET IT WHILE THE GETTIN'S GOOD—EDDIE ARNOLD—RCA
DON'T FALL IN LOVE WITH A DREAMER—KENNY ROGERS & KIM CARNES—United Artists ***
IT'S HARD TO BE HUMBLE—MAC DAVIS—Casablanca
LIKE STRANGERS—GAIL DAVIES—Warner Brothers

PLAY METER FUNKIFIED

DON'T SAY GOODNIGHT—THE ISLEY BROTHERS—T-Neck ***
TWO PLACES AT THE SAME TIME—RAY PARKER JR. AND RAYDIO—Arista ***
LET ME BE THE CLOCK—SMOKEY ROBINSON—Tamla ***
GOT TO BE ENOUGH—CON FUNK SHUN—Mercury
FUNKY TOWN—LIPPS, INC.—Casablanca
LET'S GET SERIOUS—JERMAINE JACKSON—Motown ***
SHINING STAR—THE MANHATTANS—Columbia
WE OUGHT TO BE DOING IT—RANDY BROWN — Chocolate City
MINUTE BY MINUTE—TEABO BRYSON—Capitol
INSIDE OF YOU—RAY GOODMAN & BROWN — Polydor ***

***denotes records reviewed previously by PLAY METER

Video games an aid to learning? 'There are individuals, many of them analytically extremely gifted, who are impoverished in their abilities to perceive and imagine spatial relations.' —Dr. Carl Sagan



From Newton to 'Pong' ...and beyond

By Ray E. Tilley

On a particularly busy day in your games arcade, a blue-nosed parent, Mr. Eighteenth Century, or a world-changer, Ms. Doo Good, beats a path to your office...

"My dear fellow," one of those persons oozes, "do you see all these children in this place?"

"Yes," you reply. "Business is fine. The kids are having fun."

"Fun?!" The righteous retort is that "these teenagers should be studying, improving their minds, preparing for jobs in today's world."

If you are accosted like this, your response may come out of a natural tendency to anger at someone who wants to improve the world at your expense. You may be irate at the person who wants to throw a block on a wholesome form of leisure entertainment. Or, you may feel a need to apologize along the lines, "The youngsters, and those older guys over there, too, are off the streets and out of any trouble when they're here, playing electronic games."

But now—you don't have to swallow the bullet, or get angry either. Chin up—there is ample ammunition for arguing reasonably the instructive value of amusement games.

The source is no less an authority

than a sage popularizer of science, Dr. Carl Sagan.

In his best-selling book, "The Dragons of Eden", Sagan speaks in part on the development of computer graphics—"a state of sophistication that permits important and novel kinds of learning experience in arts and sciences."

In a chapter on The Future Evolution of the Brain, Sagan details the academic use of computer programs to build complex geometric forms for viewing on a cathode ray screen. One such design at Cornell University made it possible to draw contour lines on the computer's screen. In this system, a light pen is touched to any of a number of possible commands on the screen and elaborate three-dimensional images can be made larger or smaller, stretched, rotated, joined to other projected objects, or have parts excised.

This tool for visualizing is used, we understand, in such applications as the design of automotive bodies, parts, or modifications.

But wait! you say. We were talking about *fun* games. The players in my arcade are concerned most with skill.

Right?

But while those are the players' objects—having fun and exhibiting

skill, as well as competing with others—many a pill is sugar-coated, and the medicine in this case is a little education in physics.

"The effect is eerie and instructive and helps to make four-dimensional geometry much less mysterious," Sagan writes of modern computer graphics ("Dragons of Eden", Ballantine/Random House, 1977; pp. 225 et seq.).

We repeat: *instructive*.

Sagan speaks: "Computer graphics are now being extended into the area of play. There is a popular game, sometimes called *Pong*, which simulates on a television screen a perfectly elastic ball bouncing between two surfaces."

The good doctor is, of course, referring to the "table tennis" game board represented on a CRT by Atari's pioneer video game.

As Sagan explains, "Each player is given a dial that permits him to intercept the ball with a moveable 'racket'. Points are scored if the motion of the ball is not intercepted by the racket. The game is very interesting. There is a clear learning experience involved which depends exclusively on Newton's second law for linear motion."

(Obviously, the player at this point has learned something already,

playing *Pong*: If you can't deal with Newton's second law of motion, you will soon lose at *Pong*.)

Sagan, the scientist, sees deeper things. "As a result of *Pong*, the player can gain a deep intuitive understanding of the simplest Newtonian physics—a better understanding even than that provided by billiards, where the collisions are far from perfectly elastic and where the spinning of the balls interposes more complicated physics," he continues.

Gathering information in this way is a form of play, an important form—"it permits us to gain, without any particular future application in mind, a holistic understanding of the world." This prepares the *player* for later analytical thinking, says Dr. Sagan. He stresses that the space-age development of computers and microprocessors "permit play in environments otherwise totally inaccessible to the average student."

(So tell that crusader or non-player to send the kids into the arcade *more often*, quoting Dr. Sagan as you do so.)

Sagan goes on, "A still more interesting example is provided by the game *Space War*, [where] each side controls one or more 'space vehicles' which can fire missiles at the other. The motions of both the spacecraft and the missiles are governed by certain rules—for example, an inverse square gravitational field set up by a nearby 'planet.' To destroy the spaceship of your



"The effect is eerie and instructive and helps to make four-dimensional geometry much less mysterious."
—Dr. Carl Sagan writes of computer images on video.

opponent you must develop an understanding of Newtonian gravitation that is simultaneously intuitive and concrete."

Heavy stuff, huh? Indeed. As Sagan writes, "Those of us who do not frequently engage in interplanetary space flight do not readily evolve a right-hemisphere [of the brain] comprehension of Newtonian gravitation. *Space War* can fill that gap."

This argument presents the think-

ing that the brain's right hemisphere learns pattern recognition, while the left hemisphere of the brain deals in abstract terms, such as algebra.

Sagan writes, "The two games, *Pong* and *Space War*, suggest a gradual elaboration of computer graphics so that we gain an experiential and intuitive understanding of the laws of physics." He says that an expression of Newton's second law, $F = ma$, for example, is useful as a memory device, but it is an abstraction. The computer graphic terminal—whether in an arcade or in a classroom—goes beyond the shorthand of physics to give "the prospective physical or biological scientist a wide range of experience with the cases his laws of nature summarize," in Sagan's analysis in "The Dragons of Eden".

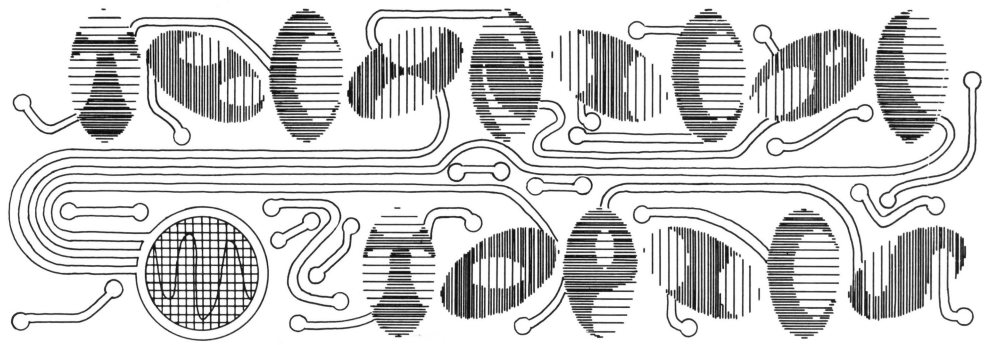
So, non-scientists and would-be scientists can learn about physical reality while they are playing amusement games.

† † †
Carl Sagan is a professor of astronomy and space sciences at Cornell University. The author of fourteen books and many shorter pieces, he has served on the faculties of Stanford Medical School and Harvard University and during 1976-77 was associated with the Viking Mars Project in Pasadena, California.

"The Dragons of Eden" is copyright 1977 by Carl Sagan. It is available in paperback from Ballantine/Randon House.



A youth with the intensity of a budding astronomer, Dave Corey sizes up coordinates.



Some 'unknown' qualities of the Midway video game...

Have You Seen the Saucers?

By Randy Fromm

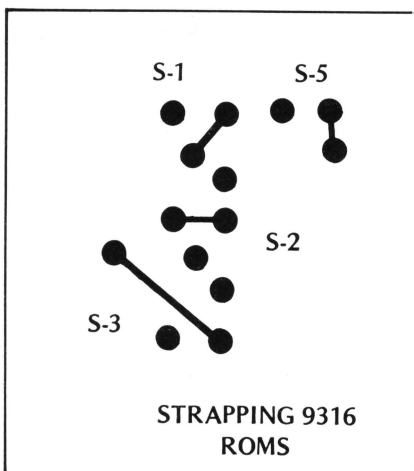
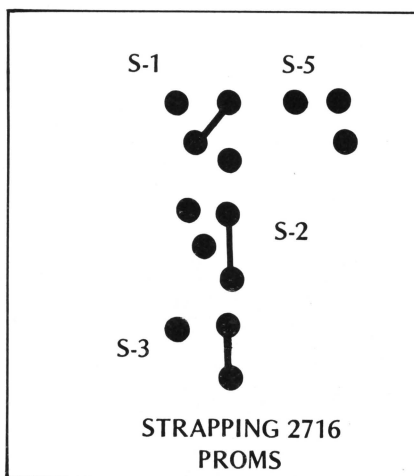


Figure 1

Midway's *Deluxe Space Invaders* has some pretty neat features that make it a lot more interesting to play than the original version. In addition to the splitting invaders, the flashing 200-point UFO, and the additional invaders that drop from the flying saucers, there is another bonus feature known to *Invader* players as the "rainbow effect."

If any one of the invaders in the bottom two rows is the last to be hit, a bonus of 500 points is awarded, accompanied by the "rainbow effect" on the monitor display. If the invader in the bottom left corner is the last one hit, the bonus is 1000 points. The invader in the number six position on the bottom row is worth 800 points.

This feature is not described on the glass or during the attract mode of the game, so many players don't even know it exists. A note describing the bonus feature can be posted inside the glass to let the players know how to earn the bonus. This will boost the collection a bit, and spark new interest in the game.

If you want to see what the rainbow effect looks like, but you're not too good at playing *Space Invaders*, you can take advantage of another *Deluxe* feature that's not mentioned in the literature that comes with the game. Switch number two on the game board controls the "preset" feature. Moving the switch to the OFF position enables the "preset mode." When credit is established, and either start button is pressed, the words "Preset

Mode" appear on the screen. Pushing the one-player start button will increment the score by 1000-point jumps. Pushing the two-player start button advances through each of the ten waves of invaders.

The *preset* mode is actually a test mode that enables you to check the play of the game through all of the waves of invaders without having to be skillful at the game. By presetting the score above 5000, you can enable the high score registration feature and put up to ten letters in the high score name register. If you want your name to stay put, however, you will have to disable the interlock switch on the back door that causes the power to drop out when the back door is replaced, erasing your name and score.

It isn't mentioned in the test instructions, but the invaders can be set so they don't fire back at you in the preset mode. By pressing the "move left" button before pressing the fire button to start the preset mode, the invaders are inhibited from dropping whatever it is they drop. Try it and you'll see what I mean! This is a good way to try and score the deluxe bonus and observe the "rainbow effect."

Don't forget to flip the switch back to the ON position before you lock the game and leave the location.

For those operators who would rather not have the high score name feature (you can write a lot of dirty words with ten letters!), Midway has a set of ROMs available with a modified program that eliminates the

high score name registration. The new ROMs also enable the high score to be reset to zero, instead of having a minimum high score of 5000.

These ROMs are available free of charge on an exchange basis from your distributor. If he doesn't know what you're talking about when you ask him about the new ROMs, have him call Midway.

If you do get the new ROMs, compare them to the original units installed on your board. Early *Space Invaders*, both the original and the *Deluxe* version, used type TMS 2716 EPROMs. These erasable memory chips can be identified by the transparent cover on the top of the device. The window is covered by a paper sticker bearing the letter position of the chip on the board.

The other type of ROM, which is used in the majority of the games produced, is a type 9316. This ROM is in a black plastic package and has no window. If your game has the 9316 ROMs, you'll have to change the "straps" on the mother board to accommodate the new program, which comes in type tms 2716 EPROMs. (See Figure 1.)

If your board uses the TMS 2716 all you have to do is swap the chips.

Another feature of *Space Invaders* is an unused "tilt" input. Grounding pin 4 of the 8-pin connector on the game board will cause the game to display the words "TILT—GAME OVER" on the screen. Unlike the existing slam switch on the coin door of the game, this tilt does not remove any stored credits or reset the computer. It simply ends the game if one is being played and causes a delay if the coin door is kicked in an attempt to obtain free plays.

If you like the high score name registration feature on *Deluxe Space Invaders*, using this new tilt instead of the existing slam tilt circuit will prevent people from kicking the coin door to reset the high score to 5000 and the name to "Midway."

To modify the game for this new tilt circuit, locate the brown-red wire at pin 5 of the power supply connector. This is the same wire that leads to the slam switch on the coin door. The other side of the slam switch is grounded. Cut the wire about 6 inches from the power supply connector and pull it back out of the harnesses, to a point directly below the game board. Connect the wire to pin 4 of the 8-pin connector on the game board.

If you have a game board that is from the table version, it will have quite a few more pins, but the tilt input is the same for both types of game boards. To connect the wire, I usually just strip back the insulation about 1½ inches and thread it

through the hole in the plastic connector. Inserting the connector wedges the wire between the pin and the connector and holds it in place. Since the connection doesn't carry any significant amount of current, the connection is adequate, if somewhat primitive.

Test the modification by turning on the game board and activating the slam switch on the coin door. The picture should display the words "TILT—GAME OVER." If it doesn't, don't panic!

Most game boards were not stuffed with the 68 ohm resistor that connects the connector pin to the

actual input chip on the board. Follow the trace back from the connector, and you'll see where the resistor is missing. Install the resistor or a jumper wire to enable the tilt feature.

If desired, a reset switch can be installed by using the brown-red wire left protruding from pin 5 of the power supply. Connect one side of a normally open pushbutton switch to the wire, and the other side of the switch to ground. I usually remove the interlock switch from the back door and use the switch and bracket as a reset switch, mounted near the power supply.

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just in time to fill in
those vacant spots
in your summer arcades

QUANTITY	GAME	QUANTITY	GAME
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1	BUCCANEER	2	KING PIN
3	GOLDEN ARROW	1	DIMENSION
2	TOP SCORE	1	TOP CARD
2	CARD WHIZ	1	AIRPORT
1	PRO POOL	1	SPIN OUT
1	PIN-UP	2	STRIKES & SPARES
3	CONQUEST	1	SURE SHOT
1	BIG BRAVE	1	GRIDIRON
2	KING KOOL	1	HOMERUN
2	FLYING CARPET	1	OUT OF SIGHT
2	FANDANGO	1	WILDLIFE
		1	PIONEER

All reasonable bids will be given immediate consideration. Games are sold "as is." Most were on location and in good working condition. They may be picked up at Vornado or delivery can be arranged for an additional consideration.

VORNADO, INC. VENDING DEPT.

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Playfield glass sizes

Here are the dimensions for playfield glasses on current games. For safety, use tempered glass only. In case your distributor does not stock the glasses, contact a local glass supplier.

Allow plenty of time for deliveries, since tempered glass is over-sized cut and then tempered, with a slight shrinkage in the process. Cost will vary between \$20 and \$35 per unit in some areas.

Dimensions are width by length. Thickness will be 3/16 inch for all glasses.

ATARI—All pinballs
(except *Hercules*, of course)

27 3/4" x 45"

BALLY

regular games: 21" x 43"

supersize: 27 5/8" x 43"

GOTTlieb

regular games: 21" x 43"

midsize games (*Spider-Man*):

24 5/8" x 48 7/16"

wide body: 27 9/16" x 48 7/16"

STERN

regular games: 21" x 43"

midsize games (*Big Game*):

24 5/8" x 45 3/4"

WILLIAMS

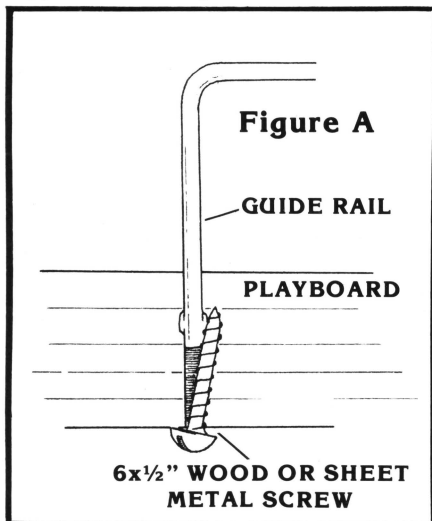
regular games: 21" x 43"

wide body: 27 5/8" x 43"

Troubleshooting Clinic

By Zac Oliver

Symptom: Guide rails slide in or pop out of their place, especially around flippers and straight hit areas.



Solution: (See Figure A.) Place wood screw in an angle, from the playfield bottom, that will force the rail against the wood. The screw threads will also hold the guide rail in place. Avoid the screw head's touching circuit lines under the board.

Subject: Stand up targets with capacitors soldered to terminals.

To prevent constant broken leads, fold capacitor leads, placing the cap body close to the switch stack assembly and fill the air gap with *silicone rubber sealant*. This will reduce the cap vibration, preventing the added stress to the leads. A small amount of sealant will do the job. Apply enough to link diode and capacitor to the switch body. In case of the need for component replacement, just peel off the sealant.

Varistor installation how-to in Rock-Ola phonographs

Subject: Rock-Ola Phonographs 447-448-480.

The Motorized Volume Control with Remote Phono on/off control (RMC Kit # 21562), when used in microprocessor controlled phonographs, will require the addition of a varistor (noise suppression device), across the Remote Operation Relay Coil. The 24 VAC relay is located in the Remote Control Power Supply.

When in operation, the relay coil will generate voltage spikes. These

spikes will interfere with processor operation and may cause lock-up of the Mechanism Controller and scrambled data.

Install the varistor across the relay coil terminals (white-yellow and gray-green wires). Late versions of the RMC # 2156-2 Kit comes with the varistor.

Catalog:

Varistor: GE MOV-II # 562A8

Rock-Ola part no. RMC # 52551

Solid-state game school enrolling

San Diego Arcade School has announced that the first session of "Practical Solid-State Amusement Repair," a six-day course on solid-state game servicing, will begin on Monday, June 9.

The San Diego, California school will be conducted by Randy Fromm, who said, "San Diego Arcade School is going to be quite different from the schools that are in operation now. The other schools are designed to teach it all, from the ground up. They provide an important service to the industry by providing operators with a mechanic that can be put to work on the route without spending time and money for training. They have to teach everything from electro-mechanical pins and jukeboxes to slots and vending machines.

"This school is strictly for solid state games," said Fromm.

The school is designed for the mechanic who is already working in the industry and needs help making the transition to electronic game repair, according to Fromm, who is a PLAY METER technical editor.

"Many people think that you need a lot of expensive test equipment to do solid-state repair, but I use a digital multimeter for just about all of my repairs. In fact the school is taught around the use of a multimeter," Fromm explained.

The six day school includes courses in solid-state pinball, video games, power supplies, and monitors. Also included in the school is a special look at the vector scan systems in current use, how they work, and what usually fails.

Other subjects covered are: the use of the digital multimeter and logic probe, selecting and using an oscilloscope, reading schematics, transistor operation and testing, cross-referencing parts, and finding sources for replacement parts.

Soldering techniques will also be stressed during the course, and various methods of soldering with a variety of tools will be available for students to evaluate.

The course consists of 46 hours of instruction, and enrollment will be limited to ten students. The cost of the school is \$350, which covers the cost of all textbooks and classroom materials.

For further information or to enroll in the June class, contact: San Diego Arcade School, 6123 El Cajon Boulevard, San Diego, California 92115; telephone 714/286-0172.

News from the world of coins

BRISBANE — The Amusement Machine Operators Association of Australia will hold its 1980 Convention July 16-18 on Queensland's Gold Coast, and the event will feature, among other things, "Australia's first Miss Pinball" swimwear and personality contest.

Latest day for convention registration is May 30. Contact on conference advance registration should be made to Mr. C. C. Clifford, Queensland Confederation of Industry, 375 Wickham Terrace, Brisbane, Queensland 4000. (Phone: 07-221-1699.) Fees for all functions inclusive is set at \$100 a person; single day attendance is \$60 per head; and late registration adds \$10.

Ground transportation is available from Coolangatta Airport to Surfers Paradise, the setting of the convention.

The National Association General Meeting will be held on Friday, July 18th at 9:30 a.m. in the Chevron Paradise Hotel, conference site. The same day the AMOA will hold a pinball competition at 2:30 p.m. and the dinner-dance and Miss Pinball Contest after 7:30 p.m.

LONDON—Entry will be "severely restricted" in the 1981 Amusement Trades Exhibition, according to a mid-March action of the ATE board of directors.

As reported in *Coin Slot*, Michael Shefras, chairman of the ATE board, said: "The turn-out at the 1980

show was so huge that there were very real problems in getting them all into Alexandra Palace. We had some complaints from the trade that they were unable to get near the new equipment because of the sheer weight of numbers. This was a view the board sympathized with...."

Entry on Monday, January 26—preview day—will be limited to members in B. A. C. T. A. Wives and children will not be entitled to entry unless they are association members.

Coin Slot reported (March 29): "Apart from members of the Association, entry will be limited to bona fide people from the trade and as an extra precaution, the entrance fee to non-members will be very high."

Shefras commented that this action should have the effect of giving genuine buyers access to the equipment on the floor without the pressure of non-trade people viewing the machines.

A related action was to "clamp down firmly" on a rule that attendees must wear their name badges during the 1981 ATE show.

Shefras said that another important decision taken at the meeting was for temporary accommodations to replace the Palm Court which will be out of commission during next year's show. It will be forming the first phase of the new re-building program at Alexandra Palace. There should be no disruption to the exhibition itself, apart from the non-

availability of the Palm Court.

He said a temporary structure with hard walls and aluminum roof would be installed on hard surface where car auctions are currently held. This would be linked to the main hall by a walkway and the temporary hall would be adequately heated.

LONDON—Pub owners fear extinction unless the British Government will allow them to raise the payoffs for their slot machines to the same level allowed at private clubs.

The pub owners' trade association contends the law allows pubs to offer payoffs of one pound, about \$2.30, compared with the payoffs of up to 200 pounds sterling, \$460, at the working men's clubs.

The association, National Union of Licensed Retailers, says the higher payoffs attract many more customers and one machine can cover a small club's overhead. Too, the private clubs offer beer at as much as 15 pence (about 35 cents) less per pint than the pubs' price for a tankard.

One pub owner expressed it: "This isn't competition. It's annihilation. If it carries on like this, the English pub is going to die," the United Press International reported.

The pub owners maintain that in 1960, pubs accounted for 68 percent of all liquor sales, compared with 49 percent in early 1980. Meanwhile, the number of private clubs had jumped from about 17,000 before World War II close to 30,000 now.

EXPORTING? Tokens are The Answer!



Do you want to operate a Pinball Game on 34 Krupecs? 62 Cruzeros? 29 Francs? 4, 350 Lira? . . . Tokens are the answer. Coin Acceptors and Slide Chutes are easily adjusted for Token Operation. Bill Changers can be quickly modified for virtually any size Token, and the number of Tokens dispensed can be set for any quantity.

It is important to allow a margin of size difference from the coins in use in any country, to prevent slugging. Pro-

viding the proper Token is selected, Coin Mechs can be set to eliminate slugging completely.

If you are exporting new or used equipment, you owe it to yourself and to your customers to consider Tokens and all of the advantages they offer.

Catalogue and assorted samples are available on request. Phone (606) 255-5990, or write Van Brook of Lexington, Inc., P.O. Box 5044, Lexington, Ky. 40555.

Table 1

MARKETING	Do at least 1 promotion each month.
EMPLOYEES	Increase repairmen by 1. Decrease overtime to -0-.
FINANCING	Reduce outstanding debt by 20% this year.
VENDING LOCATIONS	Develop 3 new locations this year.
DIVERSIFICATION	Study to see if it would be profitable to undertake a new line of vending such as juice machines. Can we make a 20% return on investment?
MANAGEMENT	Have 1 meeting each week with all managers to get goal progress reports.
ACCOUNTING	Review the Income Statement monthly. Did we have a 2% increase in sales?

Part II

I hope some people have tried the suggestions in Part I of "Establishing Company Goals and Maintaining Them" [PLAY METER, March 15, 1980, page 56]. I do suspect that those who have had a goal setting meeting have perhaps had some difficulties establishing company goals. If you did in fact try to establish company goals and were not satisfied with their "feel," perhaps you should have another meeting and use some of the following suggestions.

† † †
One of the most common problems a company faces when engaged in goal setting is that it tends to establish company goals which are vague. For example, "We need to get bigger" or "We need to make more profit"—and a very common "We need to cut expenses". If your goals were like these you will probably have difficulty implementing them.

In an initial brainstorming session defining goals, it is a good idea to keep the goals vague so as not to inhibit the generation of ideas. However, trying to implement a vague goal can be difficult, as you may have experienced. Here are some ways to refine your vague goal statements into well-defined goals which can be implemented.

Qualities of a well-defined goal

1. *Goals need to be measurable.*
Goals should always be measured in dollars, percentages, or "in numbers of...." For example, "We need to increase the number of machines by 35 or 40 percent." "We need to increase company profits 18 percent just to keep pace with inflation and another 7 percent for our normal growth. So we need a 25 percent profit increase this year." Or, "I would like to cut repair costs by \$20 per month." These goals are all measurable and a goal which is measurable is easy to keep on track, or easy for you to know how much you are off track. Its being measurable allows you to take any corrective measures leading to the accomplishment of your goal.

2. *Goals should be specific.* Being

Table 2

ANNUAL INCOME STATEMENT GOALS

ITEM	GOAL
Revenues	Increase 19% over 1979.
Wages	Reduce overtime to -0-.
Repairs	Reduce parts cost by 5%.
Interest Expense	Reduce interest by reducing borrowed funds.
Truch Expense	Hold to a 5% increase.
Net Income	Boost Net Income at least 18% to offset inflation.

company goals and maintaining them:

Put your aims into effect

By Charles C. Ross

specific relates to number 1. To be specific you should avoid the use of such words as "increase", "decrease", "minimize", "maximize", and "best". Your first attempts at goal setting will probably include these words but, as you refine and specify your goals, these words tend to fall away as your goals become quantified. Being measurable and specific both make goal tracking an easy task.

3. *Goal should have a time deadline and not be continuous.* Continuous activities should simply be a part of your routine. A goal is something specific you are striving to achieve. Company goals should be things which are attainable and not a continuous activity. For example, pinball playfield maintenance is a continuous activity and should be routine. Be sure all goals have a definite beginning and a definite end.

4. *A goal should be realistic and attainable.* For example, a goal to have 100 percent of the vending in your city may be totally unattainable. No matter what you do, you are probably not going to get the vending at some locations. Don't dream about it. So as not to frustrate you and your employees, you should be sure the goal you have in mind is achievable and realistic. An unrealistic goal can be very damaging to morale and endanger your whole goal-seeking framework.

5. *A goal should not be too costly to achieve.* You must always weigh the benefits of achieving a particular goal as opposed to what the achievement is going to cost. For example, you have decided one of your goals is to speed up cash flowing through your bank account. You may decide the way to achieve the goal is to service each location twice as often. However, the cost of having your employees empty coin boxes twice as often may be too high for the benefits derived. Remember, all of your goal achievement will involve some cost. Your job as a good manager is to decide which goals will return more in benefits than the cost of achievement.

How to determine company goals

One of the best ways to determine company goals is to set your goals by area or business function. For example, you may want to set objectives of goals for: Marketing/ Employees/Financing/Vending Locations/Diversification/Management/Accounting

Table 1 shows how you may establish goals around these areas. When you establish goals by areas you have subdivided the problem into smaller parts. Further subdivision could be made by dividing the goals for an area into smaller goals. Small goals are easier to achieve than large goals.

Goals subdivided by area are also easy to assign to the people who will be in charge of a goal's achievement. One other benefit of dividing goals into areas is that you can see if each goal is going to aid in the achievement of the company's overall objectives.

Goals may also be centered around the *income statement*. For

example, you can have a percentage increase in sales as a goal or a reduction in expense as a goal. See Table 2.

Goals centered around the income statement are usually part of a bigger goal, the most common of which is to increase profitability. These goals are often at the top of every list since making more money seems to be a universal objective.

Goals centered around the balance sheet should attempt to increase a return on investment or minimize a cost of borrowing money. Table 3 shows some of the balance sheet goals a company may feel are realistic. Yours of course may be quite different.

Goal implementation

Once your goals have been specified and verified as realistic you should rank them and begin implementation. Here are some more suggestions for goal implementation:

1. *Place someone in charge of a goal who works closely in that area.* You should not have a book-

Table 3

BALANCE SHEET GOALS	
ITEM	GOAL
Cash	Maintain \$500 maximum balance.
Marketable Securities	Shift all excess cash into marketable securities paying 10%. Have \$8,000 in marketable securities by the end of the year.
Equipment	Have a 20% increase in Net Equipment. Increase number of machines by 20.
Notes Payable	Reduce notes at bank by 25% by end of the year.

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Quotable

Excuse #1-- "The check is in the mail."

Excuse #2-- "Well, we just went on computer, and . . ."

Table 4

LET'S GET SERIOUS ABOUT GOAL ACHIEVEMENT

GOAL # _____

DESCRIPTION _____ COMPLETION DATE _____

HOW WILL IT BE ACHIEVED:

Briefly describe how the goal is going to be achieved.

ACTIVITIES TO COMPLETE	COMPLETION DATE		IN CHARGE	NOTES
	SCHEDULED	ACTUAL		
Prioritize your list of activities which must be completed. Place the activities in the order in which you plan to perform them.	Set a scheduled completion date and record the actual completion date also.		Initials of person in charge of each activity.	Record any pertinent information you need here. It may be names, or explanations of why the project is behind the time schedule or any information you think will help with an activity being completed.

keeper/clerk in charge of reducing employee overtime. The supervisor of the employees with overtime should be in charge of that goal's achievement.

2. As illustrated in Part I [PLAY METER, March 15], list all the tasks which must be performed before the goal is achieved. This list should be prioritized or placed in the order in which the activities must be performed.

3. Don't allow little of out-of-the-way tasks to keep a project from advancing. Often times, implementation of a goal requires small details be attended to before the project can proceed. Don't allow petty or minor tasks to stagnate a project—press ahead.

For example, one company had a goal of selling old machines to home buyers. The whole project was held up because the person in charge would not take the time for placement of the advertisement in the local newspaper.

4. Don't allow overwhelming tasks to stall you in your tracks. Some people are overwhelmed when attempting to chop down trees because all they see is the gigantic forest. Divide and subdivide goals into manageable parts. Get the big task broken down into several smaller tasks which can be performed. Goal achievement is usually a series of little tasks which lead to the accomplishment of the goal. Once these tasks are performed, goals are achieved.

5. Set a deadline for the activities and for the goal itself. Setting

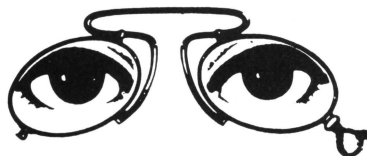
deadlines cannot be over-emphasized. Without deadlines you will find procrastination will give paralysis to your goal-seeking projects. Deadlines will help keep the goal moving at an even pace.

6. The periodic review and progress report are vital to insure you are on track and will meet your deadline. Try to schedule review meetings as often as you deem necessary, but not to the point that they burden your progress. Just because nothing has happened since your last review meeting doesn't mean you should cancel your review meeting. Hold your meeting and ask why nothing has happened since your last meeting.

Goal seeking and the accomplishment of your corporate objectives should not be left to chance. The winds of change blow enough on your business without you encouraging these same winds to determine your destination. It is easier to get there if you know where you want to go and when you would like to arrive.

Set your objectives, determine your course, establish deadlines for arrival, and sail on.

Charles C. Ross is a partner in Innovative Management Consultants. The firm specializes in consulting for amusement operators, distributors, and manufacturers. He also teaches accounting and finance at Southwest Texas State University, San Marcos, Texas.



Critic's Corner

By Roger C. Sharpe

Pinball strikes back with some heavyweights

The heavy hitters are coming out with their heavyweights, both literally and figuratively. The surge of video games this year has brought on an assault by the pingame manufacturers in an effort to blunt some of the thunder, but it's still a long battle ahead with everyone trying for that secret formula to push them onward.

So far pinball is still trying to get back much of their flock, and some of the notable machines of the year—such as Stern's *Big Game*, and Gottlieb's *Spider-Man* — have helped, as has Williams' *Gorgar* which brought speech out of the engineering room and into the arcade for that added dimension that some feel may just fill the gap.

But still and all, it's the playfield and the action that the players are looking for and the greatest problem has been consistency. All of the producers are having difficulty putting a string of winners together as well as offering games that exhibit staying power.

This year's lineup has strived for the finishing touches. Cosmetics—both sound and graphics—have gone to what many consider the next

generation and even the refining of technology and mechanical reliability have also improved, although many caught in the arms of *Asteroids* or *Space Invaders* probably aren't sensitive or even aware of the transformation pinb' ll is undergoing.

One of the most noticeable is the recently attempted changeover to fifty-cent play, that I personally find troubling only because of the caliber of the existing equipment and the state of the economy. The pricing is inevitable, but at a time when the manufacturers are trying to lure players back to pinball, it may turn out to be a costly miscalculation that works on the short run, but is doomed to failure because of all the factors that must be considered.

Look at what your top pin earns and what your top video earns and take a closer look and see what the two offer the player and how they differ. Even the most jaded pinball fan must admit that the TV screen counterparts are putting it all together and at an affordable price to the player for the value of what he's getting. With pinball it's a very different story and next month this writer will take a much closer look at

this movement away from quarter play and offer some feelings as to who can benefit and who can lose in this fight for the player's dollars.

Rather than have you think this is a negative commentary on the state of the industry, in the broadest terms, it is in fact a closer realization of the things that are changing this business and the ramifications inherent in any change. When I commented on Gary Stern's open letter and concurred with his view about the high price of games, I did so but without taking into account the shock waves that are inevitably to follow regarding the guy on the street—the ten-year-old with a buck to spend and the thirty-year-old with five dollars to burn.

But more to the point is whether the games are delivering all they can. On a brief overview of the majors, one can sense that the lid is about to blow off. Just look at this month's lineup, and you get a feeling that some exciting things are happening and due to happen. Everyone is trying their darndest to put it all together in a package that will excite operator and player alike. However, the time involved is long to acclimate everything, given the nature of the

Roger's Ratings At-A-Glance

Bally's SPACE INVADERS.....	####	Stern's ALI.....	###
Williams' FIREPOWER.....	####		

business. And, admittedly, no one seems to be hurting out there. Most are very comfortable with their piece of the pie, although many wouldn't mind another slice or two.

The development of pinball, it must be realized, has undergone many transitions and if the present day strength of video wasn't go glaringly apparent, the concern wouldn't be as great and urgent as it is. However, the reality of the situation is that video has made inroads into player acceptance and demand; and, as such, you find that phenomenon of an operator with five or six models of the same video and maybe a doubling up of only one pin at best. Will the trend change?

This month's games offer a glimmer of how the pinball manufacturers are gearing up for the war. Strong pieces with outstanding features and extras that pinball has come to rely and depend on. So here goes a look at some winners for the summer months that should be more than capable of making their presence felt....

Bally's SPACE INVADERS

Capitalizing on a name that has been synonymous with success in the coin-machine industry, Bally offers its next wide body pinball with a theme that should prove to be anything but alien to players the world over. In addition, the company is trying with this stunning effort to see if the market can bear fifty-cent play. The verdict is still out, although initial results seem to bear that it can sustain the increased price, but let's take a closer look at a machine Bally is counting on to turn its fortunes around.

PLAYFIELD: The action starts on top with four pop bumpers and three lanes leading down to complementary targets (four in all) just above a set-up of three nicely spaced thumper bumpers. At the right is a spinner for access back to the top and a bare space on the left for entry also back

to the top lanes.

Move down to the middle of the board, and there's a "bonus accelerator" loop for building up multiplier values and specials along with a center target in the middle. At the left of the field is the "clone chamber" captive ball with incremental values and a three drop-target bank with its own build-up of points.

Back over on the right is a free-standing drop target, which when down offers access back to the plunger as well as counting down the existing bonus on the field. The bottom is, surprisingly for a wide body game, fairly conventional with two sets of lanes leading down to an upper pair of small flippers and regular size flippers for the bottom lanes.

ANALYSIS: If you notice similarities between *Space Invaders* and *Silverball Mania*, you're on top of the games and if it doesn't cause you or your players any problems, fine. It might have been nice if the games were spaced a bit farther apart, but still and all, you can't take anything away from the total package of *Space Invaders*.

The utilization of memory on this game is remarkably functional with almost every feature having its own unique build-up: games within the whole game. There's the various space invader targets and lanes around the board that build up from 20,000 to 40,000 points, 60,000 points, and special value, which is held over from ball to ball.

There's a regular bonus build-up on the playfield that can also hold at the 20,000-point limit and a host of other values that can mean some pretty incredible scores if one is in the "zone" (a term used by close friend Jim Kaplan of *Sports Illustrated* to describe those wonderful moments of pinball when everything is just going right).

All in all, there is a nice array of shots to be made from any of the four flippers, but the overall impact of that

center loop for scoring potential causes it to be an overbearingly important feature that all too many players sit on and shoot for. Taken as a whole, however, *Space Invaders* provides good balance and continuity of action and an almost symmetrical design of options for players of any skill.

GRAPHICS: What Jim Patla has created on the playfield has been marvelously offset by Paul Faris who has gone beyond the realm of what has been done before to create a totally striking and effective look. The backglass is a standout with its so-called "stroboscopic infinity effect," but even the detail work on the playfield deserves kudos and special attention. Everything works and even a slightly recognizable rendition of an invader serves its purpose. And Bally has even gone all-out with a winner brochure of the "fully illustrated story" of *Space Invaders*, the pinball. Obviously, the effort is on all counts to capture the interest and attention of everybody out there.

PLAY: With the scoring potential approaching the infinity of the backglass effect, all have to be careful in setting up the limits of *Space Invaders* depending upon the level of play at each individual location, as well as making any necessary playfield adjustments to either tighten or loosen various parts of the field.

On three-ball add-a-ball, the game should be able to sustain a 240,000-point start followed by 480,000 and 720,000 point limits. For free play you might want to start it off at about 360,000 and finish it with 660,000 and 960,000 point levels.

PROS & CONS: At the core of viewing *Space Invaders* in terms of how it stacks up as a pinball machine one must accept the fact that the game can be incredibly predictable to play and as a result boring to watch if someone is on a roll. Millions in score are not unheard of and some of the rolls, especially with the long lanes to

PLAY METER

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the flippers, can tend to be a turn-off. In fact, *Space Invaders* seems to be a game of extremes whereby a player can do very, very well or just pitiful in any given game. The middle ground is almost non-existent. To play it is to make a commitment, both financially and in terms of the length of time you might be on it as a player. One solution to the latter is to try for a variety of shots rather than just the middle, but even this can become a chore that taxes the patience of the best player, and with the wider body, arm-weariness is also a factor.

However, this isn't to write off the game or even suggest that the weaknesses outweigh the positives, because as an arcade piece, *Space Invaders* is a very special machine that will garner much support, success, and undoubtedly a following among players and operators alike. Although there are some shortcomings one can't ignore the cashbox and so this effort from Bally goes to the head of the class as the best game from the company in a while.

RATING: ####

Williams' FIREPOWER

Innovating and continually up-

grading, Williams has produced a game that has something for almost every pinball player. There's speech, which debuted with *Gorgar*, a powerhouse of sound effects, strong graphics, and some wonderful technological touches that take this game beyond the ordinary and into the realm of a true standout.

PLAYFIELD: *Firepower* begins with an almost hidden top right side kick-out hole and four top lanes (F-I-R-E) which are separated in the middle by a little post set-up that also has a bulls-eye target and leads into a four thumper bumper area. At the left is a spinner lane for access back to the top while the right side balances out with an interior short lane to a kick-out hole and a farther right side area that leads back up to the top lanes.

At the center of the field are two target banks (1-2-3 on the left and 4-5-6 on the right) and the left side offers a short lane to yet another kick-out hole, while the right side has three bulls-eye targets (activating POWER). The bottom features a conventional wire firm to the flippers as well as a left side "ball saver shield" kick back kicker.

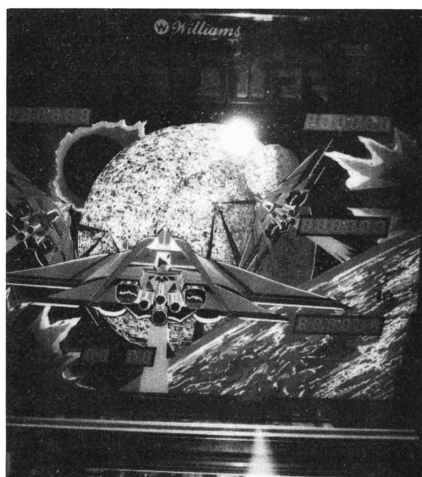
ANALYSIS: There are subtleties and intricacies with *Firepower* not the least of which is the added use of the right flipper for a lane change at the top of the field, for some added control for the player and a great, yet sometimes unnoticed, feature that gets the player involved far quicker with the action of the game. The other aspect of the machine is, of course, the fact that it's multi-ball play which also incorporates the memory of today's solid-state electronics and offers a difference from past multiple ball games such as *Fireball* and other Bally efforts.

Here, the whole package works in synch. The center targets control the lighting of the various kick-out holes for locking in the balls and the potential of having three balls in play at once. The top lanes offer the chance for multiplier values up to 5X, while the right side bulls-eye targets control the top center value as well as extra ball and the added touch of speech, such as "Fire," "Power," "Mission Accomplished," and a dynamic machine count-down when all three balls are about to be activated into play.

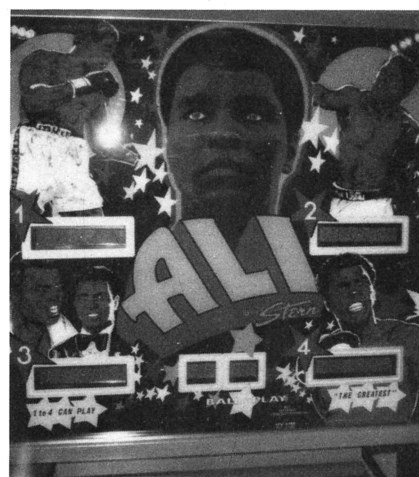
As for the game itself, without these very appealing attractions, the



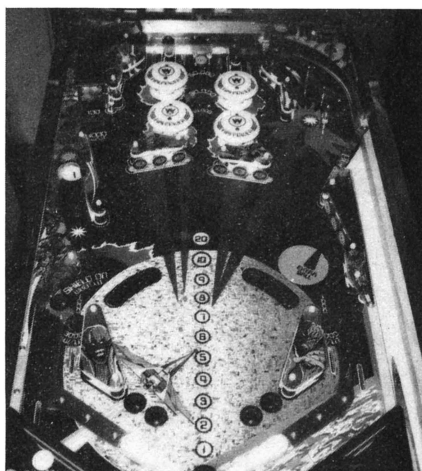
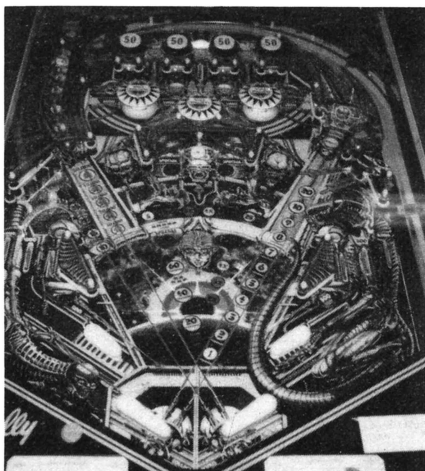
Bally's *SPACE INVADERS*



Williams' *FIREPOWER*

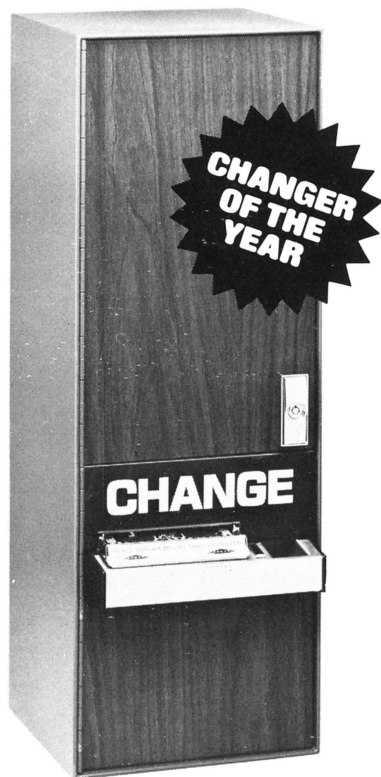


Stern's *ALI*



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play is very fundamental and relatively simplistic. In essence, the whole game revolves around getting the extra balls into play, but even the action of the game provides something if that final accomplishment doesn't happen during the course of any given game. The shots are basic and the only problems may be some wicked roll downs from the left side spinner on a weak shot, through the middle and down from the far right side on a return roll.

But with all this, the entire board is makeable and reverses from either flipper are helped along not only by a thoughtful layout but also the new Williams flipper which has more power, improved stroke, and greater accuracy.

GRAPHICS: Space remains the last frontier, to paraphrase the opening of *Star Trek*, and once again we have flying slips and galactic wars, with plenty of color and more than enough to catch the eye. The playfield, although rather stark by today's standards, offers some good detail work on the edges and plastics for a total package that's effective, attractive and memorable.

PLAY: Once again the price wars go on with *Firepower* also entering into the fifty-cent derby. And for what it's worth, the game may do far better with the conventional quarter play only because everything is predicated on the multi-ball play.

Whatever the decision, the play of the game has some reasonable potential for good six-digit scoring. On extra ball settings, go with three-ball limits that start at around 220,000 points and follow it with 380,000 and 600,000 point limits. For free play you'll probably want to increase these levels by at least 100,000 to 150,000 points per limit.

PROS & CONS: The utilization of memory tied into the captive balls can be frustrating at times when more than one player is playing at a time, but there is some inherent strategy that transcends this and makes *Firepower* an exciting game to play. Although everything is really centered around those brief moments when three balls are shooting around the field, there is enough action and close-in shot making to appeal to the average as well as skill player. The sweeps for the center targets and even the right side targets is nice, to say the least, and even the addition of star rollovers in front of the kick-out holes helps for those times when a ball is locked in. And in the very strong sound effects of machine gun fire and the flashing lights and speech and one can sense that this is Williams' machine for 1980.

RATING: ####

Stern's ALI

In a poll taken not too long ago, the results showed that the most recognizable personality in the world was none other than the "great one," Muhammed Ali. And here he is on a pinball machine that Stern hopes will be a real knockout.

PLAYFIELD: Three kick-out holes (A-L-I) separated by two rubber-ringed posts begins the action that leads down to two yellow targets and three thumper bumpers just to the right of center on the board. At the top left is a three drop target bank for multiplier values and a "rope-a-dope" loop with a spinner. Move down and the left side features a perpendicular set of three drop targets as well as a side lane that's neatly balanced by a right side of three targets and a deep short lane to a kick-out hole for collecting bonus on the field.

Two star rollovers are at the left and right of center as well as one in the center just above the flippers. The bottom is a conventional wire lane and flipper set with the interior lanes helping in the spelling out of G-R-E-A-T-E-S-T.

ANALYSIS: Although it may not have the pizzazz of the other two games featured this month, *Ali* proves to be a good follow up to *Galaxy* and a competent complement to *Big Game*. The action, self-contained only because there are no true avenues for shots back to the top of the game, is fast paced and tied into the drop targets at top for multiplier value which is held over from ball to ball as well as the spelling out of letters GREATEST and the potential of more points on the left side from the targets and even the lane.

The reverses throughout the board are neatly planned, although the primary aim seems to be the top left loop area. In fact, except for the three targets and kick-out hole for collecting bonus, the right side is rather contained and limited for play on a game that's heavily armed on the left side for points as well as features. The sound effects and flashing light displays are an added touch that aids in offsetting some of the machine's shortcomings.

GRAPHICS: Except for an overabundance of purple, the game holds true to the theme and the likeness of Ali. In fact, the work on the central figure of the backglass is exceptionally realistic and one only hopes that this works in favor of the game although some reservations—as hard as it is to imagine in this day and age—have been heard concerning this game as well as Bally's *Harlem Globetrotters*. Anyway, if you like Ali, as millions do, you're going to be

PLAY METER, June, 1980

able to look beyond the purple and see the trees on the playfield as well as the glass.

PLAY For a three-ball play in extra ball areas you'll probably be able to get by with a 250,000 point start followed by 500,000 points and 750,000 points. On a free play, go up by about 100,000 to 150,000 points to each limit depending upon the caliber of players at your location, since *Ali* can mean points that just keep mounting up.

PROS & CONS: Despite some shortcomings on the right side of the playfield, which are really more than compensated for by the left side layout, the biggest problem with *Ali* is that it scores too much, at least the way the game is presently. Put on a million light or the seventh digit of a *Big Game* and Stern would have had a very heavy hitter only because the scores do get in the millions with **GREATEST** points never seeming to end, collecting bonus possibilities and the ease of getting max multiplier early on in the game.

It's a shame the machine doesn't have this added help because the reactions to it by players would undoubtedly be different as voiced by a few people I've talked to, who like the game but can't understand the effort of trying to tilt out at 999,990 points. And how many operators are willing to reset the high score to date every week? Other than this failing, the game has some nice balance, good reverses especially to that top loop and drop-target bank, although this one area does not a game make.

RATING

And that, fun seekers, is it for June and some games that are in the news, will be making news and might even add up to being some of the better games of the year.

Next month, a look at Gottlieb, Game Plan, and some other surprises, as well as an update on the baseball season, which at the time of this writing has Kingman leading the majors in home runs and RBIs and the Cubs and White Sox both in the thick of division races after having played a dozen games.

Even the Chicago Sting, for soccer fans, are undefeated after two games and with all this talk, can football and the Bears be far behind?

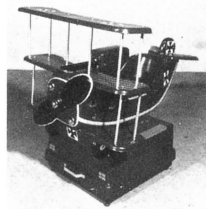
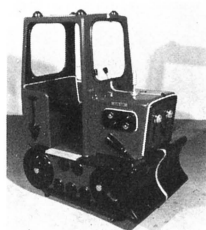
However, get ready to gear up for the summer. Bally has something that's going to be "rolling" your way, and Williams and Stern have some efforts soon to be on display that further strengthen their positions in the industry. All in all, the race is on toward the AMOA Show and that crown of having the best year in the business. So until next time, as always, be well and prosper!

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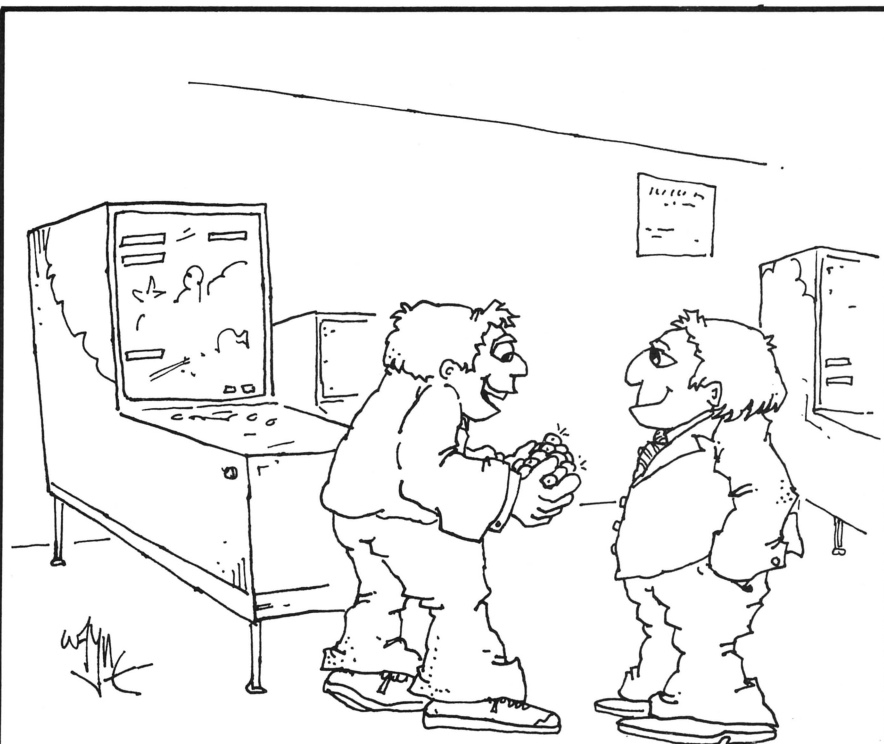
14 of the most attractive kiddie rides in the world, smaller, safer, stronger



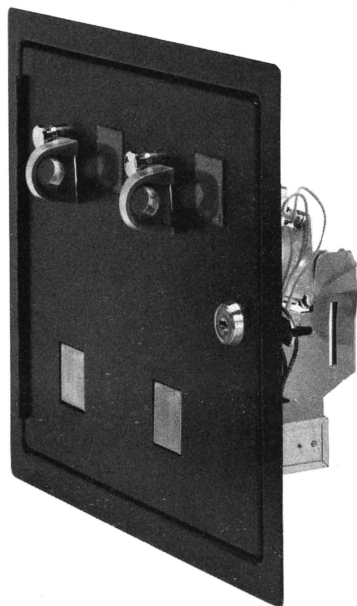
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**I didn't have any free games,
but I did get 52 free balls.**



Coin acceptor

Universal Visual Audiotronics Corp. of Davenport, Iowa, is marketing a new line of precision built, easily operated coin acceptors, suitable for most types of coin-operated machines, according to the company.

"By simply pushing the coin return button, the foreign matter drops out, just as easily as a coin is returned," explained Universal's Vice President Tom Leon. The units are primed for reducing service calls and minimizing down time, since "even a 6-year-old child can push the plunger and clear the acceptor," he added.

Leon said Universal currently has a patent pending for the coin acceptors. "Because of our numerous orders, our production capacities are being heavily strained; therefore we are shipping on a first come, first served basis."

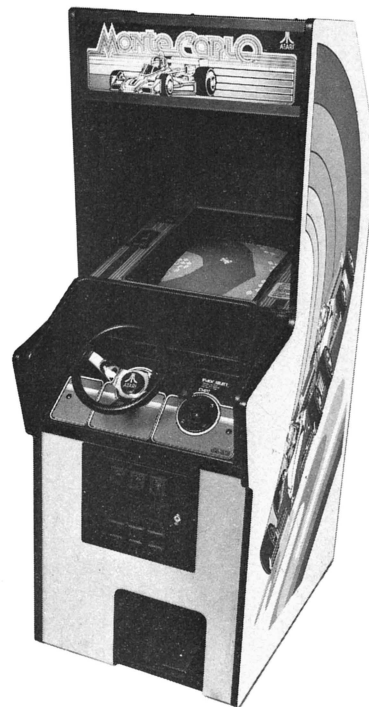
Universal Visual Audiotronics is located at 604 Main Street, Davenport, Iowa 52803.

A balloon named Fanky

Fanky Malloon, the fully automated balloon vendor allows a child to deposit his coins, select his favorite color—and the machine does the rest, automatically selecting and inflating the balloon with helium and air and presenting it with a string and finger ring. Children are treated to watch the process through the transparent case. No attendant is needed.

Each machine holds 224 balloons. It's a solid-state money-making attraction that goes wherever parents and children traffic. And every balloon (ordered exclusively through Vending International Corporation) can be imprinted with any line artwork—arcade logo, a location name, a product promotion—any message wanted.

Vending International is located at 33208 Paseo Cerveza, Suite F, San Juan Capistrano, California 92675.



Driving skill game

Atari Inc. has announced the introduction of its new *Monte Carlo* video game.

Frank Ballouz, Atari director of marketing, said: "Like our successful driving games in the past, *Monte Carlo* is fun and easy to learn. Replay is built in because as players' skills get better, there's a more difficult track to select."

The Grand Prix racing theme sets the stage for this fast-action game.

Players select from eight different tracks, rated from "easy" to "hard" and drive a brightly colored Formula I type race car through the straight-aways and curves of a constantly moving track. Drivers must also pass special "drone" cars and avoid other obstacles along the road—grandstands, hay bales, and pylons—to achieve their highest possible scores.

Extended play is a special feature of the game play. Players begin with 90 "fuel" units of time. After gaining an operator-selected score level, the player is awarded 40 extra units of time. To add to the challenge, the highest score for each track is displayed at the end of the game.

Operator options and features include a 19-inch color monitor, adjustable game times, three adjustable bonus point levels for each of four game times, and English, French, Spanish, and German language video message options.



'Asteroids' takes a seat

Asteroids' new cocktail game represents a breakthrough approach in cabinet design that is a result of thorough human factors research and input from operators around the world, according to product literature from Atari Inc.

Features include a 15-inch Atari Quadrascan X-Y video display system mounted in a rich rosewood table top. The table is covered by 3/16-inch tempered glass insulated against spills. Control panels are designed for comfort and easily visibility through the glass. Heavy-duty legs are adjustable to five different heights to accommodate any location needs.

Serviceability features include quick-release hinged table top, hinged control panel, and hinged service door. The main PCB is mounted to the service door for easier access and maintenance.

The game also utilizes a larger capacity coin box and a reliable one-piece coin control unit. For added security the cashbox is accessible only through the service door.

Asteroids Cocktail is designed for either one or two players. In the two-player mode, the video image flip-flops toward the opposite player after a hit on one of the first player's store of spacecraft.

Asteroids Cocktail's location versatility and per-square-foot return potential is further enhanced by its compact size—requiring less than 2 x 3 feet of floor space.



The Champ is back

Stern Electronics, Inc. has announced plans for production of what may be described as "the greatest" pinball game ever—the *Ali* machine, featuring images of former World Heavyweight Champion Muhammed Ali. The solid-state four-player pinball game was officially released April 1.

The *Ali* machine is programmed with electronic memory scoring and "some of the best audio/visual effects in the industry," according to product literature from Stern.

Special playfield features promise "The KO action of Ali: "

- The scoring feature spelling G-R-E-A-T-E-S-T first time, lights top turnaround loop for extra ball, the second time lights outlanes for special scoring.

- Top three bank targets, when downed, advance bonus multiplier up to five times.

- The side three bank targets, when activated, score lit star value, plus lit star value of each letter of GREAT-EST.

- And the side kickout hole scores lit bonus value.

The *Ali* machine is equipped with an on/off switch for optional background fight tones and the audio effect "If you want five rounds/To try your luck/*Ali's* got a slot/For an Anthony buck!"



Racing on the up-and-up

Gremlin/Sega has introduced a new space-saving model of its hot selling *Monaco GP* game called the *Monaco GP Mini*.

The *Monaco GP Mini* unit measures 24" depth by 25" width by 56½" height.

Like the standard *Monaco GP*, the *Mini* features color video, full stereo sound, and colorful graphics.

Monaco GP was featured by Gremlin at major trade shows including the recent International Coin Machine Show in New York City and the Amusement Operators Expo in New Orleans.

Gremlin/Sega has moved into full scale production of this new unit.



Beset by alien invaders

Cosmic Alien poses a new space skill problem to the video game player: Can you repel diving alien attacks from both the front and rear?

Double points are scored whenever an alien is hit while attacking, and variable bonus points are awarded whenever the chief alien is hit while escorted by attacking guards.

The player's spaceship, which fires missiles at the aliens, is not protected by any barricades and it moves closer to the aliens as successive screens are cleared. The player must stay particularly alert after three screens or more have been cleared as the spaceship is then exposed to rear attack!

Cosmic Alien by Universal USA comes complete with a full color monitor and is available on a one- or two-player upright or cocktail model.

No Moss

Bally Pinball Division has just released another in its line of celebrity-themed pinball games—*The Rolling Stones*, "the world's greatest rock'n'roll band." The game features artwork that, together with new game features, make it another extraordinary pinball package.

Drop targets for the first time on *Rolling Stones* have memory and an increasing point value. Each of the four drop targets scores 500 points and with the increasing point value feature they can score an additional 5,000 to 25,000 points and special.

Another new feature is the mini-post in each side hoop that score 50 points each time the ball hits it. Never before has there been a point value on a post, stated Bally product literature. Bally has also included a brand new flipper assembly and a newly designed sling shot kicker.

The intensity-building background sound is the companion to the four hit songs in the *Rolling Stones* game: "Satisfaction," "Jumping Jack Flash," "Miss You," and "When The Whip Comes Down". Fans of all ages will recognize these Rolling Stones hits and delight in a pinball concert.

The *Rolling Stones*, popular beyond comparison as a music group will draw players from all ages and in all locations, Bally promises. The *Stones* are depicted in the Faris backglass art and will gain immediate recognition among all players.



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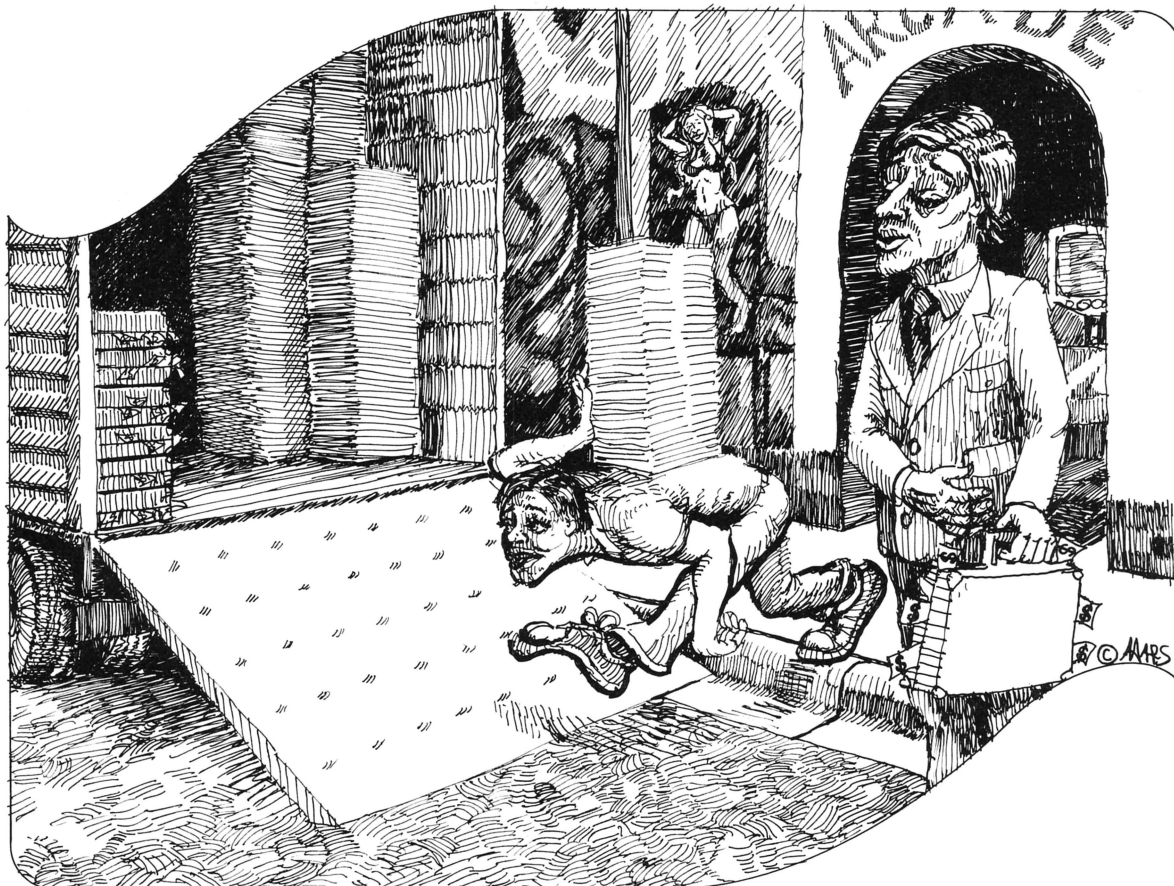
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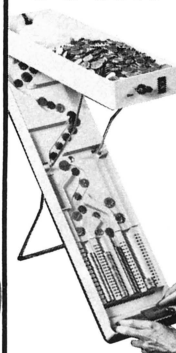
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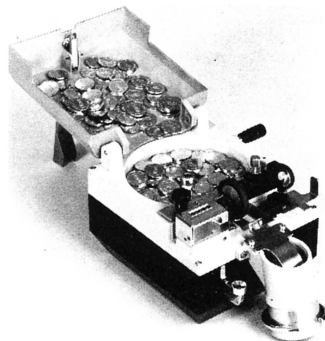
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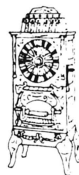
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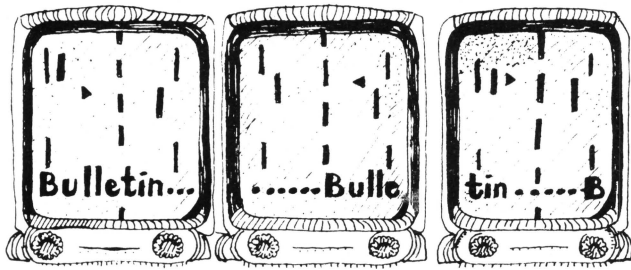


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NEWS BRIEFS

.....Atari, Inc. is making numerous distributor realignments, a complete list of which was not available from the firm at press time. A spokesman for Atari said the nationwide readjustment was in the making at late April, but added that the approach to selecting the new distributors was "scatter gun and not complete." The move is believed to be providing more exclusive distributorships for Atari products.....

.....Personnel changes were in the making at both Taito America and Allied Leisure Industries. PLAY METER has learned that Edward Miller and Bill Olligef had departed Taito to go to the Hialeah, Florida-based producer. Interim president at Taito America is Abba Kogan, who will assume the post Miller is departing. Also leaving Taito is Laura Kreter, marketing manager. More details of the staff changes were not available at press time.....

.....Pizza Time Theatre, Inc. of Sunnyvale, California has filed suit in U.S. District Court of Northern California against Topeka Inn Management, Inc. (TIM) of Topeka, Kansas, charging TIM and its president, Robert L. Brock, with breach of contract and unfair competition. Pizza Time, a chain of family entertainment centers with token-operated games, petitioned the court for injunctive relief and cash damages in the amount of \$250 million.....

.....Leaving the coin-op business March 1 was Lester Rieck, sales manager for Rock-Ola Manufacturing Corp. of Chicago. Rieck, a veteran of the industry, was saluted by his firm for his service upon his retirement.....

.....Washington Governor Dixie Lee Ray gave tavern and card room operators a break-- tabulated at \$612,500 a year-- by vetoing a measure that would have allowed the state to take over an expiring federal tax on gambling devices. The measure had been designed to prevent an expected loss of revenue when the federal tax expires June 30. The governor said she vetoed the bill because it raised unanswered technical questions and made the ultimate effect of the bill indefinite. (See story inside this issue, AOE seminars, for another view of the expiring federal law.).....

The feds, reacting to criticism that the Susan B. Anthony dollar coin is unpopular because it can be confused with a quarter, are looking into the possibility of the U.S. Mint making it a different color, such as brass. However, a Mint spokesman has stated any change it might make would have to be acceptable to the coin-op and vending industry. Any such change would require an Act of Congress since the act authorizing the one dollar coin specifies cupro-nickel clad coinage.....



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- MISSION ACCOMPLISHED when astronauts are safely returned to the mothership.



FEATURES

- 1 or 2 PLAYERS
- Full Color Action for great player appeal
- New "Contemporary Cabinetry" with Taito built-in durability
- Vibrant game graphics for easy equipment placement

	HEIGHT	WIDTH	DEPTH
Dimensions:	171 c/m	61 c/m	87.5 c/m
Specifications:	110V	50/60 HZ	
Playtime:	Operator Adjustable		
Playpricing:	1 player per coin		

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THE LEGEND OF PANTHERA



Panthera—mystical princess-goddess. Born to royalty. Kidnapped and abandoned in the forest. Raised and nurtured by a fierce but maternalistic tribe of jungle denizens, ultimately returning to her queenship. Panthera—exciting, mysterious, unpredictable, a fitting name and theme for Gottlieb's newest Star Series 80 game.

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